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PUBLIC ACCESS TO PUBLIC DOMAIN LANDS

TWO CASE STUDIES OF LANDOWNER— SPORTSMAN CONFLICT

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PREFACE

Slightly over one-third of the total land area of the United States is owned by the Federal Government. About 60 percent of the Federal land is administered by the Bureau of Land Management, U. S. Department of the Interior, which has exclusive jurisdiction over more than 450 million acres of unappropriated public domain lands in 11 contiguous Western States and Alaska.

For the past 100 years and more there has been a constant and often bitter struggle among rival users for control and use of public domain lands. The early history of the West largely is a story of conflicts between white men and Indians, cattlemen and sheepmen, stockmen and homesteaders. Mineral interests, timber operators, conservationists, and, more recently, recreationists entered the struggle.

The Bureau of Land Management must not only act as a referee, but also ensure that the outcome will be in the best interests of the general public. To say that this is a difficult task would be a serious understatement. Laws and regulations governing the use and management of public lands are complicated, and often conflicting and some believe they are largely obsolete. Each special interest group tends to equate its own welfare with that of the general public, and there are few firm legislative or administrative guidelines for identifying or measuring the public interest.

This study deals with a relatively new type of conflict over the use of public domain lands. The dispute is focused on the issue of public access. Sportsmen and some other recreational users are demanding more and better access to public lands. Private landowners and certain user groups (including some recreational interests) would like to preserve the status quo. Thousands of square miles of public domain lands, scattered from the Rocky Mountains to the Pacific Ocean, presently are unavailable to recreational users, due to physical or legal restraints upon public access. The outcome of this struggle will determine, in large measure, how these lands will be used--and by whom.

The Economic Research Service has had a long and continuing interest in the ownership, control, use, and management of land resources. How public lands are administered affects private sectors of our economy, and vice versa. This is especially important in the West, where about half of all land is in some form of public ownership and where most public lands are used by private interests.

The Economic Research Service made this study under a formal cooperative agreement with the Bureau of Land Management. The results should contribute to a better understanding of land-use conflicts in general, and landowner-sportsmen conflicts in particular. Such conflicts are inevitable, and it is important that they be resolved as promptly and effectively as possible.

Publication of this report has been delayed for several unavoidable reasons, but the situations described have not greatly changed.

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SUMMARY

Conflicts between sportsmen and landowners over the issue of access to public domain lands result primarily from economic factors associated with recreational uses of these lands. Owners of private lands adjacent to public lands administered by USDI's Bureau of Land Management tend to prohibit or restrict access to public lands by closing their private roads to sportsmen. In this way, they avoid the costs of cleaning up litter or replacing buildings or equipment damaged by vandals. They can also capture benefits for themselves by charging access fees to hunters who want to cross private lands to get to public lands.

Sportsmen try to avoid paying fees for access to public lands, and their organizations are protesting more frequently to State and Federal agencies that manage the blockaded public lands.

The report describes the problems experienced by the Bureau in its management of the Piceance Creek area in Colorado and the Caliente Mountain area in California. All access roads to both areas pass over privately owned land; the owners restrict access over these private roads. Alternative arrangements that would more fairly apportion costs and benefits to landowners and sportsmen alike are evaluated.

PUBLIC ACCESS TO PUBLIC DOMAIN LANDS
Two Case Studies of Landowner-Sportsman Conflict

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THE PROBLEM IN PERSPECTIVE

The long and continuing struggle for control and use of some 170 million acres of public domain lands in the 11 Western States (excluding Alaska and Hawaii) has taken on new dimensions in recent years. ^{1/} Commercial user groups--stockmen, timber producers, and mining interests--still exert a powerful influence on the use and management of these lands. But noncommercial users--especially sportsmen--are becoming increasingly articulate and aggressive about public land management. User conflicts are growing in number, intensity, and complexity as the needs of an expanding, affluent population press harder on a relatively fixed supply of public land resources.

Lack of public access to some parcels of public domain lands is the focal point of many user conflicts. Millions of user-days are logged on the public domain each year by hunters and fishermen. But the efforts of sportsmen to reach some of these lands are thwarted by legal and physical restraints on access. For several years, sportsmen's organizations have been pressing for more and better public access to public lands. This pressure has been resisted--more on practical grounds than on principle--by some private landowners and other user groups who feel that their own interests would be adversely affected by a change in access status. The Bureau of Land Management (BLM), as administrator of public domain lands, is caught in the middle of this controversy.

This part of the report deals primarily with the nature and extent of the controversy over public access. It attempts also to provide a conceptual framework for understanding and resolving access conflicts within the context of multiple-use management.

Origin, Nature, and Extent of the Problem

The Federal Government, at one time or another, held title to most land west of the Appalachian Mountains. The original public domain stretched unbroken over vast areas of the Great Plains, Mountain, and Pacific regions.

^{1/} There is no convenient term which describes precisely the status of lands administered by the Bureau of Land Management. The words "public domain" or "unappropriated public domain" are used in this report to denote all lands--excluding O&C and CBWR (Oregon & California Railroad Company and Coos Bay Military Wagon Road) lands--under the exclusive jurisdiction of BLM.

Early public land policies were aimed at transferring all Federal lands into non-Federal ownership through cash sales, grants to States, grants to railroads and other transportation companies, homesteads for settlers, and other means. This goal was modified somewhat in the last part of the 19th century when large blocks of the remaining public domain were reserved for national parks and national forests. The disposal process continues today, but at a greatly reduced rate. The amount of land in the public domain has remained relatively stable since the mid-1930's.

Today, the remnants of the public domain consist of thousands of large and small parcels of land scattered throughout the West. Public access problems can be traced in large measure to this fragmented ownership pattern. Enactment of some apparently conflicting Federal statutes has resulted in Federal agencies being uncertain whether they were to develop the lands or merely hold them for future development.

Fragmented Ownership--A Legacy From the Past

Since the early "planners" of our Nation never intended that public domain lands would be retained and managed, no provision was made to maintain public access to unclaimed lands. This early intention that public lands be disposed of under laws passed at various times is one cause of present-day public access problems. Most land suitable for farming soon passed into private ownership. In the West, this included most lands in valleys and stream bottoms. Mineral discoveries resulted in thousands of small mining claims, many of which eventually went to patent. Grants of scattered sections of Federal lands to States and "checkerboard" grants to railroads sliced the public domain into even smaller pieces. The withdrawal of large blocks of public domain lands for national parks and national forests, and smaller blocks for military reservations, power sites, and other special uses completed the fragmentation process.

Awareness that some of the public domain would not, and probably should not, pass out of Federal ownership was late in coming. However, it would have been difficult to correct the mistakes of the past and to create a more rational ownership pattern for unappropriated lands, even if there had been a strong inclination to do so. But lack of clear policies and programs for the use and management of the public domain tended to obscure the real limitations of dispersed ownership until fairly recent years, when the clash of rival user groups brought the problem more clearly into focus.

Insecurity of Tenure--The Policy Vacuum

There is not now, and has never been, what properly could be called a comprehensive or integrated public land policy. Over the years, Congress has enacted much legislation on public lands. Some of these statutes are obsolete and provide no firm basis for executive decisionmaking. Administrative regulations and directives frequently reflect this lack of standards and goals. In the absence of clear-cut policy objectives, decisions often are made on a case-by-case basis. Since the results of these decisions are unpredictable, BLM and its predecessors have been forced to operate in a more or less constant state of uncertainty.

Insecurity of tenure has greatly inhibited planning activities and investment decisions required for the effective use and management of public domain lands--including decisions relating to the provision and maintenance of public access. Until fairly recent years, public land managers have had a tenuous hold on the land they manage. Presidential Orders following the passage of the Taylor Grazing Act in 1934 withdrew from entry all unappropriated public lands (except in Alaska) pending classification and determination of most desirable use. ^{2/} Disposal of these lands since that time has been a discretionary function delegated to the Secretary of the Interior. These lands were not "reserved" for any particular purposes, however, and a variety of methods still exist for their disposal. The situation was clarified somewhat by a Presidential statement in 1961 that the public domain constitutes ". . . a vital national reserve that should be devoted to productive use now and maintained for future generations." ^{3/} This was followed by a moratorium on most types of nonmineral applications and petitions for public lands to provide an opportunity for accelerated inventory and classification activities. The Classification and Multiple Use Act of 1964 provided temporary authority for classifying lands for retention or disposal and for establishing criteria for multiple-use management of retained lands. Legislation was passed at the same time for creation of a new Public Land Law Review Commission.

These recent actions helped to remove some uncertainty regarding the ownership and management of unappropriated public domain lands. However, the struggle among rival interest groups for control and use of these lands probably will intensify in the future and will cause continued difficult problems for public land administrators.

The Struggle for Control and Use of the Public Domain

Western livestock interests sought--and won--the use of unappropriated public lands long before the Government established a system for administering the lands. This was accomplished to some extent through the ownership of strategic tracts of private lands acquired by homesteading, arrangements with other people to homestead, purchases from individuals or the Government, and sometimes even by mining claims or other subterfuges. But other--and more violent--methods were sometimes employed in the long and bitter struggle for control of Federal rangelands.

This hard-won victory for control of Federal rangelands gave stockmen a sort of implied proprietary interest in public domain lands--an interest which they have defended vigorously over the years. The Taylor Grazing Act did little at first to change this situation. Conflicts between livestock interests and public land administrators climaxed in the 1940's with the abolishment of the Grazing Service and a merging of its functions with those of the General Land Office into a new agency, the Bureau of Land Management. In recent years, the demands of recreationists and conservationists for access to public lands have

^{2/} Executive Order 6910 in 1934 and 6964 in 1935.

^{3/} The President's Special Message to the Congress on Natural Resources, February 23, 1961.

been becoming louder and more insistent. Traditional privileges of commercial users are being contested by these new groups.

The expanding conflict over the control and use of public lands has created opportunities as well as problems for the Bureau. Solutions acceptable to a wide variety of interest groups obviously are more difficult to work out. In doing so, however, the Bureau is protected to a certain extent by the counter-vailing pressures exerted upon it, and thus is better able to consider the broader public interest.

Public Use--But Which Public?

BLM is charged with responsibility for managing public lands in such a way as to produce the maximum benefit for the general public. The heterogeneous nature of public goals and values makes it extremely difficult to determine which actions will in fact produce the greatest public benefits. Except for crises such as threats to our national existence and continuance of the main-stream of our social system, we seldom identify ourselves with a single public goal, or with policies devoted to a single end. There is not one public but many--each with a different goal for, or special interest in, public land policy. Policies most beneficial to one public often conflict with those most beneficial to another. As noted before, a general public land policy has not yet been melded out of these groups, so each group proclaims itself as spokesman for the public at large.

The Bureau also is committed, under terms of the Classification and Multiple Use Act of 1964, to the principle of multiple use. (No attempt will be made here to review the voluminous body of literature on this subject or to evaluate the theoretical concepts upon which this principle is based.) Multiple use is merely a depersonalized term for multiple users; and it is the users, not the uses, that cause trouble. Cattle and deer may compete for the same forage resources, for example, but it is the ranchers and the hunters who actually compete for use of the land.

In allocating use privileges among users, public land managers often must rely upon personal judgment. They generally are provided some objective decision criteria, however. Timber and oil are allocated usually on the basis of competitive bids. Grazing privileges are rationed through a system of licenses and permits based primarily on property rights in private lands, prior use, etc. When law or custom prohibit or discourage the allocation of privileges on the basis of market considerations or property rights, the public land manager is placed in a difficult position. In weighing one use against another, he often is led into areas that his basic training and practical experience have not equipped him to handle. This is especially true in the case of recreational uses.

Landowners and Sportsmen Clash

With the sharp rise in the demand for outdoor recreation that occurred shortly after the end of World War II, demand began to outstrip the supply of readily accessible lands as more and more sportsmen sought out remote and

isolated parts of the public domain. Landowners, alarmed by this invasion of hunters and fishermen and anxious to protect their own interests, began to restrict access to and across private lands. Economic opportunities arose and were seized upon, with fees being charged for access privileges to both private and public lands. Landowners complained about the irresponsible acts of sportsmen; sportsmen complained that they were denied use of public lands.

By the late 1950's, the situation had attracted national attention. Articles on the subject began to appear in newspapers and sports magazines. 4/ Criticism was directed not only at BLM, but at other public land management agencies as well. A Colorado study released in 1959 estimated that 1.5 million acres of public lands (including 1 million acres of national forest lands) in that State were blocked to free public access. 5/ An Oregon study, released a month later, concluded that at least 500,000 acres of Federal lands, highly valuable for hunting and fishing, were blocked in that State. 6/ In October 1959, the Senate Committee on Interior and Insular Affairs held public hearings on this subject in Portland, Oreg. In this same year, the Bureau estimated that about 12.4 million acres of public domain lands lacked physical access (i.e., could not be reached easily by existing roads or trails), and that an additional 5.4 million acres (including most "checkerboard" lands) were closed off by operations of private lands.

The Bureau reacted cautiously to these mounting pressures for a number of reasons. For one thing, it was more or less pushed into recreational activities without adequate funds, time, or personnel budgeted for this purpose. Sportsmen discovered and seized upon recreational opportunities on BLM lands without an invitation. Bureau personnel were forced to adapt to the situation and to make the best of it. In 1960, the Bureau proposed that persons holding grazing permits or leases on BLM lands post the boundaries of these lands so that the public would be aware of their location. Livestock interests strongly opposed the proposal, and it was announced in 1961 that the Bureau itself would assume this responsibility. 7/ A 1967 proposal would make access to public lands offered through private lands a consideration in resolving conflicting grazing applications on BLM lands outside organized grazing districts ("section 15 lands"). No decision had yet been made about this and other proposed changes in grazing regulations in April of 1968.

Nature of the Problem

The issue of public access narrows to two basic policy questions: (1) "What constitutes adequate, sufficient, or reasonable public access to public lands?"

4/ For example, see: Michael O'Hearn, An Iron Curtain Across the West, Sports Illus., Nov. 6, 1961.

5/ The report was prepared by a committee of the State Legislature and submitted to the Colorado General Assembly in January 1959. Most of the fieldwork was done by the Colorado Game, Fish, and Parks Department.

6/ Oregon State Game Commission, Special Report--Public Access to Federal Lands for Recreational Purposes, Feb. 11, 1959.

7/ The announcement was made to the Public Lands Committee of the American Livestock Association at Denver, Colo., Sept. 8, 1961.

and (2) "Where does public (or BLM) responsibility for access end and private (or other public) responsibility begin?"

Answers to the first question vary widely, even among sportsmen and experts on recreation. The components of public access are easy enough to identify: knowledge, legal rights, physical means, economic ability, etc. But acceptable standards are not so easy to devise for classifying public lands as "accessible" or "inaccessible"--or even for ranking them in importance. This is because access barriers act more as screens than as walls; they let some people through and keep others out. A person with sufficient time, money, strength, determination, and knowledge of public lands can reach just about any part of the public domain he may wish to visit. A person with a small income, a short vacation, or a weak heart has a more limited range of choices. The degree of restraint imposed by each component of access, singly and in combination, thus varies from person to person, time to time, and place to place.

Answers to the second question generally reflect people's self interests. Those who enjoy (and can afford) pack trips into remote areas of the public domain seldom complain to the Bureau about the lack of vehicular access routes. Owners of four-wheel-drive vehicles are not too concerned about the physical condition of public roads and trails. People with landowner friends or plenty of money may not care whether access routes are public or private. The weekend sportsman with a passenger vehicle and a limited budget is likely to feel that BLM (or some other public agency) should provide equal access opportunities for all users.

One fact of particular significance tends to be ignored in many discussions about public access. Current access restrictions provide an effective, if not an ideal, means of rationing hunting and fishing opportunities on public lands. If these restrictions are eliminated, some other rationing system eventually will have to be imposed. Unless judgment is made to give sportsmen top priority in the use of public lands, some areas probably will be designated as "off limits" to hunters and fishermen to protect the natural resource base, other users, or even the sportsmen themselves. A goal of "free and unrestricted" public access (a phrase used by some sportsmen's groups) could have an adverse effect on multiple-use management.

The question of what constitutes adequate public access to BLM lands can only be answered within a comprehensive framework for planning and decision-making. This framework presumably will include operational criteria for selecting among uses and among intensity of uses. Until such plans and programs are developed, the controversy is likely to continue and expand.

Extent of the Problem

Due to the combination of factors described above, the magnitude of the public access problem can only be measured in an indirect and imprecise fashion. The number of known conflicts over access is a rather useful indicator, although it represents only a fraction of existing or potential access problems. Several hundred separate parcels of BLM lands are, or have recently been, the focus of disputes involving public access. As might be expected, the more populated States have more conflicts; California alone has about 100 tracts in this category.

About 18 million acres, or 10 percent of the lands administered by the Bureau, were estimated by BLM field personnel to be inaccessible at the start of this decade. Around 5.4 million acres, or 3 percent of all BLM lands, excluding Alaska, were classified as blocked by private landowners. Estimates in 1967 by BLM field personnel placed 5.4 million acres of hunting and fishing areas in the "inaccessible" category.

The size of the access problem is also demonstrated by the discrepancy between the present access situation and that which the Bureau would like to achieve. Bureau officials estimate that it will require about \$1.6 billion to complete a planned system of roads and trails. Average annual expenditures during recent years have amounted to less than \$1 million. If these estimates accurately reflect needs, the discrepancy between what is being done and what needs to be done is truly immense.

Still another indicator of the problem is the apparent increase in public awareness of the access situation. Each hunting season brings a rash of letters from irate sportsmen, newspaper and magazine articles, and other expressions of concern over the lack of access to public lands. Many of these complaints are ill-founded, but pressure for action seems to be mounting.

BLM Responsibility and Authority for Providing Access

Rapid changes in policy often outrun the development of institutional machinery to implement the policy. This has happened to BLM in the field of outdoor recreation. The broad guidelines have been laid down; but the specific standards, tools, and methods have not yet evolved.

Responsibility Implied by Statutes and Directives

The rights of the general public to use most lands administered by BLM for hunting and fishing has long been recognized. This right specifically extends to lands used by private persons under the terms of the Taylor Grazing Act. Section 6 of the Act 8/ states:

"Nothing herein contained shall restrict the acquisition, granting, or use of permits or rights-of-way within grazing districts under existing law; or ingress or egress over the public lands in such districts for all proper and lawful purposes."

While BLM has the responsibility for seeing that lands it administers are available for "all proper and lawful" uses by the public, landowners who hold grazing privileges on BLM lands are not required to grant access across their own lands to sportsmen who want to use public lands. The use of the word "proper" leaves some room for rejecting incompatible uses, but the Bureau generally has taken the position that extensive recreation does not unduly interfere with grazing.

8/ 43 U.S.C., Sec. 315e.

Unpatented mining claims are not open to the public, although title to these lands still rests with the Federal Government. These claims can, and often do, block access to other public lands.

Following the upsurge of concern about public access to public lands in the late 1950's, BLM initiated or stepped up a number of activities designed to help alleviate the access problem. The Bureau announced in 1961 that it would initiate a program for the posting of public lands to aid in their identification and use by the general public. This policy was reaffirmed by an Assistant Secretary of the Interior in a letter dated November 19, 1962, 9/ which also mentioned several other facets of the Bureau's access program: construction of multiple-purpose roads, improvement of landowner-sportsmen relations, preparation of ownership maps, and land exchanges to consolidate public lands into larger blocks.

The program, however, was not pushed with much vigor, due largely to continued uncertainty regarding the Bureau's degree of responsibility in the field of outdoor recreation. This uncertainty was largely dispelled by the passage of the Classification and Multiple Use Act of September 19, 1964. Section I of this Act 10/ lists 10 specific objectives of public land management. One objective is the development and utilization of fish and wildlife resources. The Secretary of the Interior has interpreted this to mean "protection, regulated use, and development of habitat on public lands and waters to obtain a sustained yield of fish and wildlife and provision and maintenance of public access to fish and wildlife resources." 11/

This legislation gave BLM its first reasonably clear (if temporary) mandate to do what it could about the access problem. 12/ But it also handed the Bureau the staggering task of classifying lands for disposal or for retention and management, and of developing operational criteria for multiple-use management of retained lands.

Authority for Acquiring and Maintaining Public Access

The legal authority of the Federal Government to acquire public rights-of-way (and other rights in private property), through condemnation procedures if necessary, is inherent in the concept of sovereignty and is specifically provided for in the Act of August 1, 1888. 13/ This authority has been tested and upheld many times in the courts, even when no specific statutory authority existed for the action. For example, in Polson Logging Company vs. United States 14/ the

9/ The letter from Assistant Secretary John M. Kelly to Representative Lester Johnson of Wisconsin was in response to a complaint by a Wisconsin resident regarding the inaccessibility of public lands in Wyoming.

10/ 78 Stat. 986, 43 U.S.C. 1411-18.

11/ Federal Register, Vol. 30, No. 196, Part II, p. 12914; emphasis supplied.

12/ The Act, as originally passed, had a duration of 4 years.

13/ 25 Stat. 357.

14/ 160 F (2nd) 712, 1947.

court ruled that "the statutory authorization to procure real estate may be evidenced by the making of an appropriation as well as a specific authorization to acquire."

This implied authorization is of particular significance since the Bureau has no statutory authorization to acquire public rights-of-way, i.e., access routes exclusively for use by the general public. The annual appropriation acts of the Department of the Interior, however, provide funds "for the construction of access roads, acquisition of rights-of-way and of existing connecting roads" These yearly appropriations represent the only authority the Bureau has to acquire access to public lands specifically and exclusively for the benefit of the general public.

Authority for acquisition of timber rights-of-way, on the other hand, is contained in the Act of July 26, 1955 15/ which states "that the Secretary of the Interior may acquire rights-of-way and existing connecting roads adjacent to public lands whenever he determines that such acquisition is needed to provide a suitable and adequate system of timber access roads to public lands under his jurisdiction." Timber access roads, however, are not necessarily open to the general public.

While it is clear that the Bureau has the legal authority to acquire public rights-of-way, it is also clear that this authority is temporary and incidental in nature as compared to the authority for acquiring timber rights-of-way. The deterrent effects on decisions to acquire public rights-of-way may be more psychological than legal in origin, but they are nevertheless real. The use of condemnation procedures exclusively for acquiring public access is practically unknown within the Bureau. Public rights-of-way, when they are obtained, usually are acquired in conjunction with timber access roads or general service roads.

A Broader Look at the Bureau's Responsibility and Authority

A strictly legal appraisal of means available for resolving disputes over public access makes the problem appear simpler than it really is. BLM must, of course, operate within a legal framework, but it must also deal with physical, economic, and social realities of the situation.

The unique physical characteristics of recreational "products" complicate the transformation of responsibility and authority into action. It is easier to decide when, where, and how to acquire access for timber management purposes, for example, where products are measured in terms of board feet and valued according to species, grade, etc. Standards and methods for recreational management are still in a relatively crude state of development, and the training of most Bureau personnel (in forestry or range management) does not especially equip them to use such tools as are available.

These unique, and largely undefined, physical characteristics inhibit the use of conventional economic criteria for decisionmaking. Many Bureau employees have had a great deal of experience negotiating the purchase of timber rights-of-way or, if this fails, initiating condemnation actions. Within a fairly broad

15/ 69 Stat. 374.

confidence range, they can assess the dollar value of timber to be sold, the type of access required, and the fair value of rights-of-way acquired through private lands. While the acquisition of rights-of-way for recreational purposes follows the same general procedure, the valuation problems are quite different. Arriving at dollar values, however, is only part of the decision-making process. The incidence of costs and benefits arising from the provision of public access must also be considered. In doing so, it would be unreasonable to expect decisionmakers to ignore the effects on the Bureau's budget. The costs of providing public access must be paid for out of appropriated funds, while the costs of timber access can be financed from timber sales. Although the dollar benefits from recreation can be laboriously computed and put on paper, they cannot be used directly to manage the resource until some system of user fees is developed and implemented.

Public responsibility and authority are not created solely by laws, executive directives, or court decisions. Other social institutions, less formal but no less powerful, often are important determinants of public land management. Custom and tradition have placed outdoor recreation high in American value systems. This is particularly true of hunting and fishing--activities regarded by many as a part of the "American birthright." This attitude is widely shared by people who do not actively engage in outdoor recreational activities, but accept them as good, wholesome, and worthy of public support. The existence of this attitude explains why the Federal Government got into the business of providing recreational services in the first place and why it is likely to continue this line of activity. It also explains why the controversy over public access for recreational uses of public lands carries with it the threat of major political repercussions.

All of these factors indicate that the public land administrator, in carrying out his responsibility and in using his authority, is handicapped by the lack of objective choice indicators for resolving disputes over the provision of public access.

An Economic Framework for Decisionmaking

Decisions by the Government regarding the use and management of resources are both political and economic--in substance, in the process by which they are reached, and in the institutions through which they are implemented. But special interest groups commonly base their claims to public resources on economic arguments. In reconciling the demands of these groups, the public administrator must judge the validity of conflicting economic arguments. He cannot do this objectively without using economic criteria and standards to weigh the merits of various claims.

If properly used, economic concepts, techniques, and methods can make at least a small contribution to a better understanding and more effective handling of many public land management problems. It should be clearly recognized, however, that economic analysis is a supplement to--not a substitute for--the political process.

Concepts and Approaches

A basic concept of economics is that of optimum use of resources. Optimum use is achieved by the application of two major economic principles to decisions on resource allocation--the principle of equalizing marginal values in uses and the principle of marginal cost pricing.

The principle of equalizing marginal values in uses simply asserts that, in allocating resources among competing uses, the total value of the resources is maximized when all users derive an equal marginal value in use. Optimum use is reached, in other words, when no resources can be allocated to a higher use.

This principle is easier to define than to apply, especially when noncommercial uses are involved, as they are in the problem under investigation. It is difficult to compute marginal benefits or willingness to pay when uses are not normally allocated through a price system. But even very crude data help to reveal the direction, rate, and range of reallocations of uses that should be explored in response to changing conditions.

The second principle is that resource users should be charged (directly or indirectly) prices equal to the marginal costs of supplying the resource, including values foregone by not putting the resource to some other use. This happens, supposedly, in the private sector of our economy under conditions of perfect competition.

Since marginal cost pricing in the public sector often is politically infeasible, direct application of this principle to problems of public land managers is limited. Furthermore, conventional accounting systems, including those used by BLM, do not provide the type of information needed for analysis of marginal costs. Despite these practical limitations, the principle is a useful tool for public administrators to have at their disposal. The process of formulating pricing policies, for example, would be enhanced if the costs of all subsidies were accurately measured and the recipients clearly identified.

These two principles obviously do not make up the whole of economic theory bearing on the use of resources. They may illustrate, however, how the tools of economics can be used to supplement the political decisionmaking process, and how the concept of optimum use differs from other choice indicators used in the field of public land management. 16/

Institutional Considerations

Economic analysis is not altogether a matter of logic, statistics, and cost-benefit ratios. It is concerned also with the economic aspects of human behavior--what people want, why they want it, and how they are going about getting it. To understand human behavior, it is necessary to examine the rules that govern

16/ It should be noted here that the concept of multiple use, as a theoretical construct, does not provide a logical basis for choosing among uses or among intensity of uses. Multiple-use management, logically, is the outcome of deliberation--not the starting point.

behavior in a social context. Institutions are the formal and informal working rules of our society--the laws, administrative regulations, customs, traditions, and so on that tell us how to act toward one another.

Institutions are means to achieve ends. In economic analysis, they are treated much the same as any potential resource. That is, they are evaluated in terms of their contributions to the material welfare of people. Since institutions perhaps represent the most significant group of controllable variables affecting the use of natural resources, this analysis can point the way to greater economic efficiency, stability, and growth.

With respect to the public access problem, two sets of institutions in particular seem to be worthy of careful study. These are the institutions which prescribe rights in land and those which govern the rights and conduct of sportsmen. These two sets of institutions provide much of the emotional, legal, and economic fuel for landowner-sportsman conflicts over access.

There is a strong presumption, supported by evidence collected during the course of this study, that most access conflicts arise and persist because institutional rigidities prevent an equitable sharing of costs and benefits arising from use of public lands by sportsmen. The issue usually boils down to a question of "Who gets what, and who pays for it?"; and neither landowners nor sportsmen are happy with present arrangements for resolving the issue.

In more formal terms, access conflicts arise when there are external economies and diseconomies which dissociate the incidence of benefits and costs. A landowner, for example, may be forced to incur some costs as a consequence of recreational uses of adjacent public lands (whether or not he permits access across his own lands), yet he may have no effective means of receiving benefits from these off-site activities. By the same token, a sportsman may be forced to incur extra costs as a result of a landowner's decisions regarding access, and yet receive no extra benefits.

These situations arise when institutions either expressly prohibit the association of costs and benefits or fail to provide a mechanism whereby this can be accomplished. Institutions prescribing property rights in land generally do not permit these rights to extend beyond ownership boundaries. Institutions governing the rights of sportsmen generally rule out the payment of full costs for benefits received. The market system cannot operate effectively under these circumstances (i.e., there is little room for bargaining transactions), and nonmarket solutions (i.e., rationing transactions carried on through the political process) are stymied by institutional rigidities. Hence the conflicts persist.

From an economic standpoint, it is important that access conflicts be resolved as quickly as possible, not only because of their disturbing influence on program development and management, but because they are likely to reduce the value of public lands. When costs and benefits are dissociated, too many resources are likely to be used for producing benefits which have been dissociated from costs and too few resources used for producing benefits which are associated with costs.

Method of Study

This study was conducted in a simple and conventional manner. The methods employed require little elaboration. Work was organized and carried out in three phases, in which the problem under investigation was identified, analyzed, and evaluated.

The first step was to assemble background materials and develop a conceptual framework for the study. This "thinking through" phase was concerned with identifying the various elements of the problem and assigning functional relationships to these elements.

The second phase was concerned with testing these assumed relationships in real situations. Because of time and money constraints, and in view of the detailed nature of the information required, a case-study method was used for this phase of the study. Two study areas were selected--one in Colorado and the other in California. Access situations in these areas are not typical or representative of those prevailing in most areas administered by BLM. On the contrary, a deliberate effort was made to select areas known to have serious and longstanding access problems.

The third phase of the study was devoted to an evaluation of the findings. Since the research was policy oriented, an effort was made to provide information in a form useful for the formulation of public policies and programs. The evaluation does not contain all the ingredients needed for policy decisions, of course, and the conclusions reached should not be regarded as policy recommendations.

Introduction

The Piceance Creek area of northwestern Colorado is one of the most famous and productive deer hunting areas in North America. Each year thousands of hunters from all over the Nation congregate here for the opening of the big game season. Numbers of hunters per square mile and hunter success ratios in this area are consistently among the highest in Colorado.

The Bureau administers more than 80 percent of the land within this study area. ^{17/} The existing network of roads and trails is relatively extensive for this part of the country, and less than one-fourth of the road mileage passes through private lands. Yet private landowners control vehicular access to 43 percent of the land area, including some 140 square miles of public domain lands. During the hunting season, these owners barricade private roads and collect "trespass fees" from hunters who wish to use the blockaded public lands.

This places BLM in an awkward position. Landowners have a legal right to demand payment for the use of private roads and trails. Sportsmen, on the other hand, have a legal right to hunt on BLM lands, and are officially encouraged to do so. That private parties are in effect buying and selling privileges to hunt on public lands, openly, points up one of the most critical problems in the realm of public access.

The Physical Setting

The Piceance Planning Unit is located in the high foothills on the western slope of the Rocky Mountains, far from any major population centers (fig. 1). The area is characterized by rolling hills and ridges, broken frequently by dry washes and small drainages with steep slopes. Elevations range from about 6,000 to 8,000 feet. Vegetation is predominantly sagebrush-grass, interspersed with pinion-juniper at the higher elevations.

The unit contains approximately 348,000 acres (545 square miles) of land, of which about 280,000 acres (453 square miles) are administered by BLM. It is serviced by 718 miles of roads and trails, 157 of which pass through private lands. Lands along most stream bottoms are privately owned. Since it is difficult and expensive to construct roads over ridges and across streams, most travel routes follow stream courses or run along the top of ridges.

Public lands in the area are used primarily for the production of forage, wildlife habitat, and minerals. These uses have not changed appreciably in recent years, but competition among users (stockmen, hunters, and mineral producers) is growing more intense.

^{17/} For convenience, and to simplify the analysis, the boundaries of this study area correspond to those of the Piceance Planning Unit in the Craig District of Colorado. Each BLM District is divided into several planning units, which, as their name implies, are used for planning rather than administrative purposes.

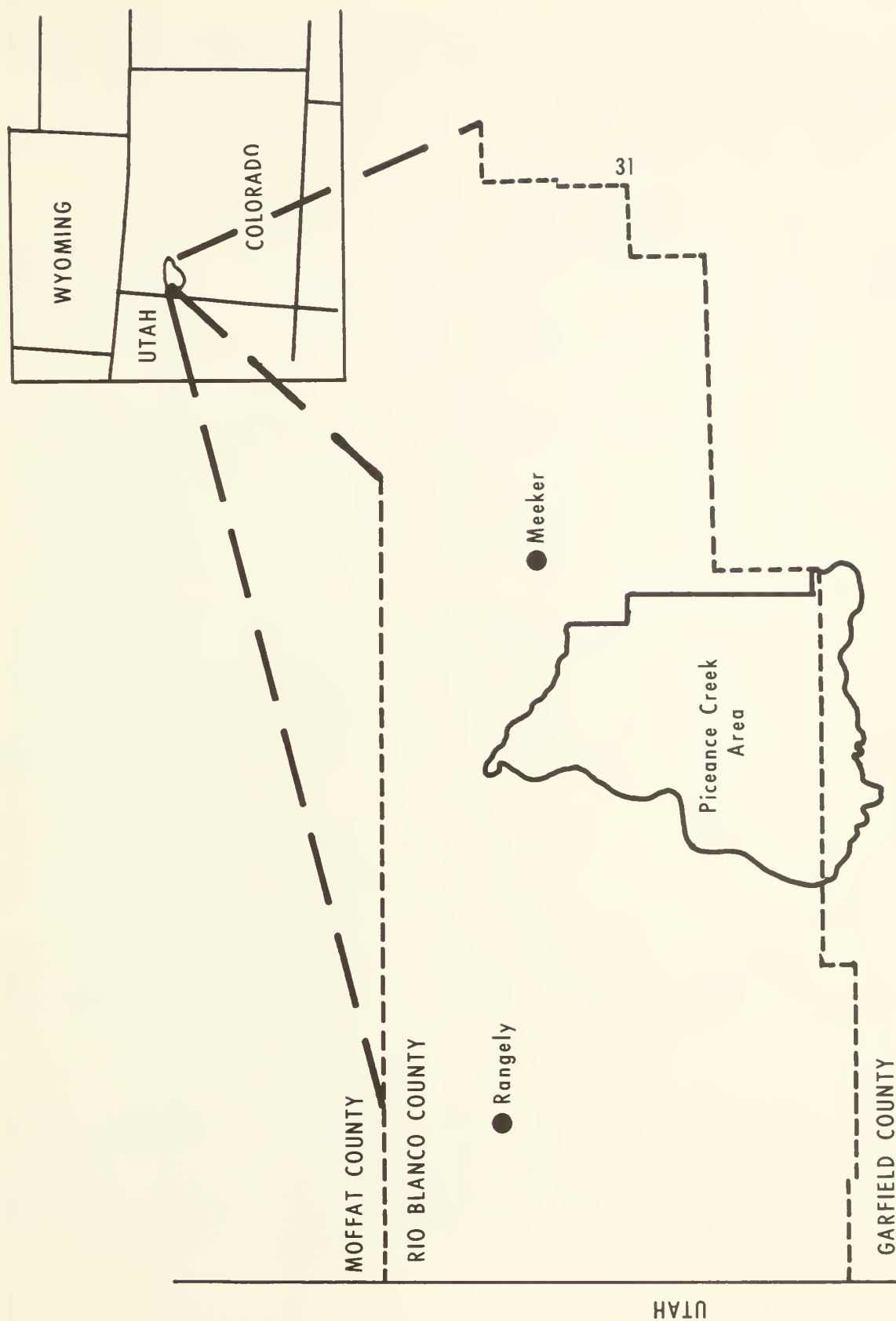


Figure 1.--General Location of Piceance Planning Unit: Craig District, Colorado, 1966.

Grazing permits are allocated primarily under common tenure arrangements; ranchers are issued permits for a specified number of animal-unit months (AUM's-- 1 month's grazing by one cow or steer or five sheep) on a communal range. All public domain lands in this unit are part of a grazing district administered under Section 3 of the Taylor Grazing Act. About 35,000 AUM's are distributed among 20 permittees, who together pay about \$11,500 annually for these grazing privileges.

Piceance Creek is a wintering area for one of the largest herds of mule deer in the Nation. The estimated size of this herd in recent years has ranged from 30,000 to 60,000 head. Each fall this herd migrates from the higher elevations (largely National Forest land) to winter feeding areas in the Piceance and Douglas Creek basins. The migrant deer population has declined considerably since the late 1950's, when shortages of forage and browse necessitated special post- and pre-season hunts with a limit of up to four deer per hunter. It is difficult to make an accurate estimate of the number of deer feeding in the study area during the fall and winter months, but it probably falls somewhere in the neighborhood of 15,000 to 20,000 animals in an "average" year. The number of deer reported killed within the boundaries of the unit has ranged from 2,000 to 4,000 in recent years. The unit also provides habitat for a growing population of resident deer and a few elk. Some data relating to the use of the study area by deer hunters during 1962-66 are presented in table 1.

Minerals are found in great abundance in the Piceance Creek drainage. These include oil, gas, coal, sand, gravel, stone, and small deposits of other minerals. Thick oil shale deposits underlie the entire area; Piceance Creek is in the heart of the much-publicized Green River Formation of Colorado, Wyoming, and Utah. Oil companies recently have purchased many ranches in the area and leased the lands to their former owners at nominal rates pending future mineral development. Most of the area was staked with mining claims before 1920; many new claims were staked in the mid-1960's.

The Current Access Situation

The inaccessibility of public lands in the Piceance unit essentially is caused by legal, rather than physical, barriers. The present network of roads and trails provides fairly good physical access to all lands in the unit. In good weather it is possible to drive within 1 mile of almost any spot in the area with an ordinary car or pickup truck. All roads generally are open to the public except during deer hunting season. Then the access situation changes drastically.

An inspection of the area 2 days before the opening of the 1966 deer season revealed a complete closure of private travel routes. Gates across every road and trail leading through private property were chained and padlocked. Temporary "toll booths" (tents and trailers) were in position beside some of the gates. Signs posted along major roads directed hunters to these toll gates.

Table 1.--Statistics on use of Piceance Creek Planning Unit by deer hunters,
1962-66

Item and unit	Year <u>1</u> /					Average 1962-66
	1962	1963	1964	1965	1966	
Hunters (number) -----	2,074	3,981	2,260	3,113	2,185	2,722
Local <u>2</u> / -----	337	254	289	232	248	272
Other Colorado -----	899	1,333	900	893	733	951
Other States -----	838	2,394	1,071	1,988	1,204	1,499
Hunters per sq. mile--						
Number -----	3.82	7.32	4.16	5.73	4.02	5.01
Rank <u>3</u> / -----	22	5	18	10	6	12
Kill per sq. mile ---						
Number -----	2.81	9.64	2.54	6.16	2.39	4.71
Rank <u>3</u> / -----	25	4	27	2	13	14
Success ratio <u>4</u> / -----	0.74	1.32	0.61	1.08	0.59	0.93

1/ The area had a 2-deer limit in 1963 and 1965 and a 1-deer limit in other years.

2/ Includes Garfield, Mesa, Moffat, and Rio Blanco Counties.

3/ There are 91 Game Management Areas in Colorado; these figures show the relative position (in descending order) of the Piceance area in each of the years.

4/ Number of deer killed per hunter.

Source: Prepared from data supplied by the Colorado Game, Fish, and Parks Department. Figures for Piceance Game Management Area were adjusted to conform with boundaries of Piceance Planning Unit.

While only 61,000 acres of land and 138 miles of roads are privately owned, the owners control access to over 150,000 acres and 364 miles of roads. In the "blockaded" category are nearly 90,000 acres of BLM lands and 226 miles of roads located on these lands. The effects of these closures are summarized in table 2.

The owners of a thin strip of private land south of the county road running through the center of the unit are blocking access to nearly all public lands in the southwest quarter of the unit. This road follows Piceance Creek through the bottom of a deep canyon. The only practicable access routes to the high country on either side of the canyon occur where tributary streams join Piceance Creek. The stream bottoms south of the creek are privately owned. The access dispute in this case is focused on the lack of public rights-of-way across a few hundred yards of private property.

Table 2.--Land area and travel routes by ownership and access status: Piceance Planning Unit, at start of deer-hunting season, 1966

Item	: Acreage or milage	: Open to public	: Closed to public	: Total
			<u>Number</u>	
Total area -----	Acres-----	196,880	150,640	347,520
BLM lands -----	---do-----	190,080	89,600 <u>1/</u>	279,680
Other lands -----	---do-----	6,800 <u>2/</u>	61,040	67,840
Roads and trails -	Miles-----	354	364	718
State -----	---do-----	37	0	37
County -----	---do-----	28	0	28
Other -----	---do-----	289	364	653
On BLM lands -	---do-----	270	226	496
On other lands	---do-----	19	138	157
			<u>Percent</u>	
Total area -----	Acres-----	57	43	100
BLM lands -----	---do-----	68	32	100
Other lands -----	---do-----	10	90	100
Roads and trails -	Miles ---	50	50	100
State -----	---do-----	100	0	100
County -----	---do-----	100	0	100
Other -----	---do-----	44	56	100
On BLM lands -	---do-----	54	46	100
On other lands	---do-----	12	88	100

1/ Includes about 12,800 acres accessible in 1966 under terms of an annual leasing arrangement between a private landowner and the Colorado Game, Fish and Parks Department.

2/ Lands owned by Colorado Game, Fish, and Parks Department.

Source: Compiled from maps prepared during course of study.

Who is Blocking Access, and Why?

About two dozen private landowners control access to the 90,000 acres of blockaded public lands. The amount of BLM lands thus controlled by individual owners varies from a few hundred acres to about 42 square miles.

Access to prime hunting areas is worth a great deal nowadays, and landowners in this area are taking advantage of opportunities afforded by their strategic location. Table 3 gives some estimates of the amount and value of hunting use in the Piceance unit by ownership and access status of lands. Blockaded public

Table 3.--Estimated amount and value of hunting use by ownership and access status of lands, Piceance Planning Unit, 1966

Item	Unit	Open to public	Closed to public	Total
Total land -----	Acres---	196,880	150,640	347,520
BLM lands -----	do---	190,080	89,600 <u>1/</u>	279,680
Other lands -----	do---	6,800 <u>2/</u>	61,040	67,840
Estimated average annual use by --				
All hunters <u>3/</u> -----	Number--	1,542	1,180	2,722
On BLM lands -----	do---	1,489	702	2,191
On other lands -----	do---	53	478	531
Average annual value @ \$10 per hunter --				
All hunters -----	Dollars-	15,420	11,800	27,220
On BLM lands -----	do---	14,890	7,020	21,910
On other lands -----	do---	530	4,780	5,310
Average annual value @ \$25 per hunter --				
All hunters -----	do---	38,550	29,500	68,050
On BLM lands -----	do---	37,225	17,550	54,775
On other lands -----	do---	1,325	11,950	13,275
Average annual value @ \$50 per hunter --				
All hunters -----	do---	77,100	59,000	136,100
On BLM lands -----	do---	74,450	35,100	109,550
On other lands -----	do---	2,650	23,900	26,550

1/ Includes about 12,800 acres accessible in 1966 under terms of an annual leasing arrangement between a private landowner and the Colorado Game, Fish and Parks Department.

2/ Lands owned by Colorado Game, Fish, and Parks Department.

3/ Based on use estimates for 1962-66 supplied by the Colorado Game, Fish, and Parks Department.

Source: Tables 1 and 2.

lands are capable of accommodating about 700 hunters each year under present conditions. At \$25 per hunter--the "going rate" in 1965, according to BLM and State game management sources--the use of blockaded public lands by hunters would yield private landowners approximately \$17,500 annually in the form of

trespass fees. ^{18/} This is considerably more than the Bureau receives for grazing privileges on all public lands in the unit. These owners also could collect an additional \$12,000 from the sale of hunting rights on their private lands.

Access to most of the blockaded public lands is controlled by 12 ranchers, all holding BLM grazing permits. These 12 owners account for more than 50 percent of all privately owned lands, use 80 percent of the AUM's allocated to private landowners, and control access to 75 percent of all blockaded public lands in the Piceance unit. The estimated acreage, hunter capacity, and hunting value of BLM lands blockaded by these 12 permittees is shown in table 4. Half of these owners are in a position to collect more from hunters using public lands than they pay for their own use of these lands. The two largest permittees control access to more than 40,000 acres (64 square miles) of BLM lands.

Over the years, owners controlling access have come to believe that they have a proprietary interest in the use and management of public lands. Any attempt to change the public access situation will understandably be resisted.

Public Access and the Local Economy

As noted before, even the most sophisticated cost-benefit analysis cannot provide all the answers needed for public policy decisions. The Bureau, however, would like to avoid actions injurious to local economies or to people with the largest and most direct economic interest in public lands. This poses the question: "What effects would the provision of public access have on the local economy?"

The town of Meeker, population 1,655, located a few miles above the northeastern corner of the Piceance Planning Unit, and near the center of a prime deer-hunting region, serves as the headquarters or assembly point for more than 10,000 hunters each year. Most hunting is done on Federal lands (BLM or national forest). While the use of public lands by hunters gives a significant boost to the economy of this region, it is difficult to get an accurate picture of the amount and incidence of local benefits arising from hunting activities in the study area. It also is difficult to determine the economic effects of access restraints without conducting a survey of sportsmen and landowners. On the basis of available data, however, it is possible to construct a reasonable set of estimates.

Number and Origin of Hunters

Selected statistics relating to the use of the Piceance Planning Unit by deer hunters in 1962-66 are in table 1. During this 5-year period, an average

^{18/} As one might expect, landowners are reluctant to disclose the size of trespass fees collected from hunters. However, BLM employees and State game management people who live in the area and have frequent contacts with landowners and hunters estimate the present rate for hunting privileges on both public and private lands at around \$25 per hunter when no other services are provided by the landowner.

Table 4.--Estimated acreage, hunter capacity, and hunter access value of BLM lands blockaded by 12 landowners holding grazing permits: Piceance Planning Unit, 1966

Landowners	: Deeded : : lands : : in unit :	Annual grazing permits : on BLM lands :		Control of public access : to BLM lands :		
		AUM's	Payments	Land <u>1/</u>	Hunters <u>2/</u>	Value <u>3/</u>
	<u>Acres</u>	<u>Number</u>	<u>Dollars</u>	<u>Acres</u>	<u>Number</u>	<u>Dollars</u>
A -----	2,160	2,628	867	6,400	50	1,250
B -----	1,560	480	158	1,920	15	375
C -----	7,640	7,848	2,590	26,880	211	5,275
D -----	2,200	2,588	854	2,560	20	500
E -----	6,400	4,521	1,492	14,080	110	2,750
F -----	1,720	2,680	885	2,520	20	500
G -----	1,280	2,086	688	1,240	10	250
H -----	2,760	2,161	713	2,400	19	475
I -----	800	600	198	2,220	17	425
J -----	480	872	288	1,440	11	275
K -----	2,040	546	180	2,240	18	450
L -----	3,680	1,200	396	3,840	30	750
Total						
12 landowners	:32,720	28,210	9,309	67,740	531	13,275
All private owners	:61,040	34,661	11,467	89,600	702	17,550

1/ Figures are rough estimates only.

2/ Based on use estimates for 1962-66 supplied by Colorado Game, Fish, and Parks Department.

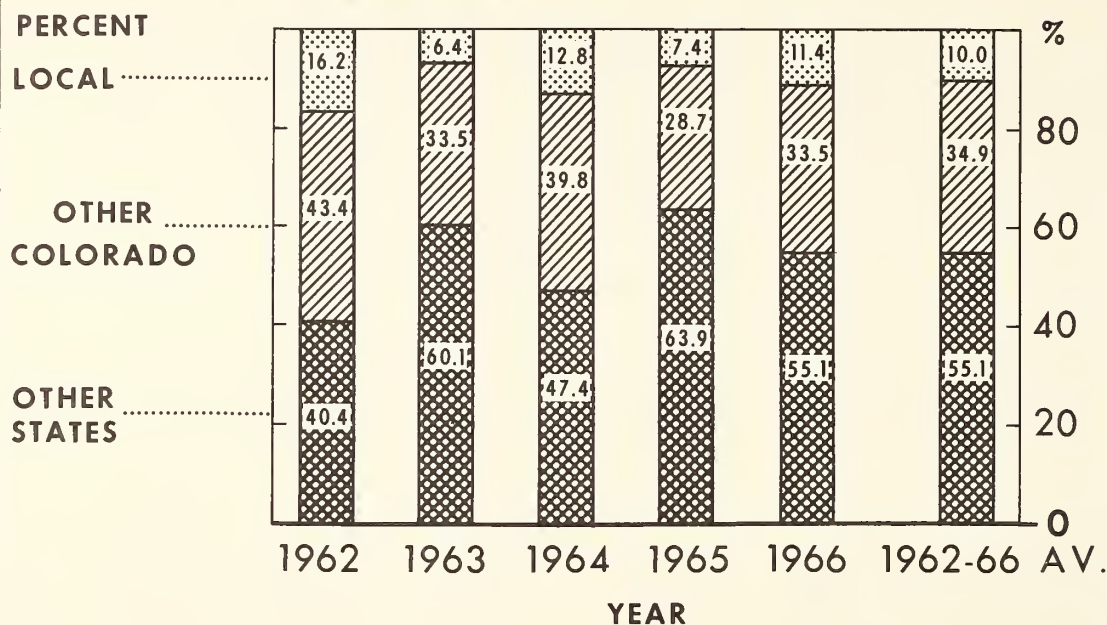
3/ Assuming average trespass fee of \$25 per hunter.

Source: Compiled from BLM records.

of 2,722 persons hunted the area each season. Only 10 percent (272) of the hunters resided in the local area (defined here as Garfield, Mesa, Moffat, and Rio Blanco Counties). Other parts of Colorado accounted for 35 percent (951) of the hunters; the remaining 55 percent (1,499) came from other States or foreign countries.

The number and distribution of hunters by place of residence is closely correlated with the annual bag limit. More sportsmen were attracted to the area in 1963 and 1965, when each hunter was allowed to take two deer. The bag limit in this area, determined on the basis of estimated deer population, customarily alternates between one and two deer. Quality of hunting, as measured by the number of deer killed per acre and per hunter, follows this same pattern. People come into the area when hunting opportunities are good and go elsewhere when prospects are not so good. Most such hunters live outside Colorado (fig. 2).

DEER HUNTERS USING PICEANCE PLANNING UNIT BY PLACE OF RESIDENCE 1962-66



U. S. DEPARTMENT OF AGRICULTURE

NEG. ERS 5796-68 (11) ECONOMIC RESEARCH SERVICE

Figure 2

These relationships between number of hunters, residence of hunters, and quality of hunting have important economic implications. The number of local hunters in the Piceance Creek area shows little change from year to year. This might be expected in view of the stable population of the local community. With the present deer population, local hunters can utilize only about 10 per cent of the hunting opportunities afforded in the area. The remaining 90 per cent of the opportunities are used by outsiders. This places hunting in the category of a basic industry--one that exports goods and services to other areas and generates new business and income for the local economy.

Type and Amount of Expenditures Made by Hunters

Exactly how much money is spent by hunters using the Piceance Creek area, and on what, is conjectural. Surveys of hunter expenditures, conducted periodically in Colorado and other Western States, provided some indication of the nature and extent of expenditures attributable to deer hunting. Additional information was obtained from public records and documents, research reports, conversations with informed persons, and a variety of other sources. Data from all known secondary sources were examined before expenditure estimates were prepared for the study area. Since data from these various sources often conflicted with

each other and had to be adjusted to fit conditions in the study area, the estimates also reflect a considerable amount of personal judgment.

Estimated per capita expenditures of deer hunters using the Piceance Creek area, by type and place of expenditure, were compiled separately for out-of-State hunters, nonlocal Colorado hunters, and local hunters (appendix tables A-1, A-2, and A-3). They show average costs for a 3-day hunt, including depreciation charges for equipment, travel to and from the hunting site, license fees, and on-site expenditures. Imputed costs of time (7 days for out-of-State hunters, 4 for Colorado hunters, and 3 for local hunters) are not included in the estimates.

Average expenditures are estimated at \$225 for each out-of-State hunter, \$125 for each Colorado hunter residing outside the local area, and \$53 for each local hunter. Most of the variation in estimated expenditures is accounted for by travel costs and license fees. It was assumed that local hunters' familiarity with the area and its people would permit them to avoid guide fees and charges by landowners.

The important thing in this part of the analysis is the amount of money spent in the local area. Here the estimated figures are \$65 per nonresident hunter (whether he lives in Denver or Chicago) and \$40 per local hunter. The belief that out-of-State hunters have more money to spend, and spend it more freely, is not supported by empirical evidence. Most studies have found no consistent relationships between amount of expenditures and residence that cannot be explained by differences in needs, incomes, or personal preferences. Once they have reached the hunting site, all nonresident hunters have about the same needs for food, shelter, etc. And there is no reason for assuming that place of residence is closely related to the incomes or personal preferences of nonresident hunters.

Multiplying the average number of local, other Colorado, and out-of-State hunters using the Piceance Planning Unit during 1962-66 by the estimated per capita expenditures of each group gives the average amount of expenditures attributable to hunting activities in the study area (appendix tables A-4, A-5, and A-6). Total expenditures of the three groups are estimated at over \$470,000--\$170,000 of which is spent in the local area, \$158,000 in other places in Colorado, and \$142,000 in other States.

Hunting activities in the Piceance Planning Unit thus induce about \$0.5 million in direct annual expenditures, or nearly \$1.40 for each acre of land in the unit. Figures such as these often are used to estimate the value of extra-market goods and services (i.e., those which normally are not priced in the market). This practice is useful for some purposes, but the results frequently are misused. If all hunting opportunities in the Piceance Creek area suddenly were to vanish, most people now using the area probably would find some other place to hunt. The impact on the national economy would be slight. Colorado would experience a larger jolt. The local economy, however, would bear the full impact of a loss of \$170,000 in direct expenditures.

Many segments of the local business community--including most "main street" business establishments--receive a share of the business generated by hunters. About 60 percent of the local expenditures of hunters are for goods--food, hunting equipment, gasoline, liquor, gifts, etc. The remaining 40 percent goes for services--lodging, trespass and land-use fees, guide services, etc. The bulk of these services are provided by landowners. What this means to the local economy is discussed below.

Local Income Generated by Hunters

Estimating the amount of income generated directly and indirectly as a result of hunting activities is a rather complicated and difficult task, especially when it is necessary to work with secondary information. Reliability of the estimates depends largely on the validity of assumptions regarding the amount of income realized from various types of expenditures, the structure of the local economy, and the spending habits of local people. While these assumptions appear to be realistic in light of other research findings, ^{19/} they may not hold in this particular instance.

Whether to include the income effects of expenditures by local hunters posed a dilemma. Since these people live and spend most of their money in the local community, their expenditures on hunting activities do not necessarily represent a net contribution to the local economy. Proximity of hunting opportunities probably influences the spending patterns of local hunters. If hunting opportunities were not available locally, some people might purchase more golf clubs or television sets, and fewer rifles or boots. The more avid hunters, on the other hand, probably would go outside the area to hunt, diverting business and income from the local economy. In view of the indeterminate nature of this problem, income resulting from expenditures of local hunters was ignored.

Another source of local income associated with hunting activities also is excluded from consideration. The Colorado Game, Fish, and Parks Department and the Bureau of Land Management have several full-time employees stationed at Meeker. These agencies also purchase local goods and services. A portion of these expenditures could be allocated to game management and habitat improvement activities in the Piceance Creek area, but was not.

Income estimates presented here, therefore, are based exclusively on expenditures of nonresident hunters. This introduces a significant, but largely unknown, downward bias in the estimated importance of the local deer-hunting "industry."

The estimated amount of direct and indirect local income generated by expenditures of nonresident hunters is presented in appendix table A-7. These expenditures produce an immediate or direct income of approximately \$90,000 for the local economy. This "new" money continues to circulate through the system,

^{19/} For example, see: Richard E. Lund. A Study of the Resources, People, and Economy of Southwestern Wyoming. Wyo. Nat. Resource Bd. 1962; James R. Gray and Wayne L. Anderson. Recreation Economics in South Central New Mexico. N. Mex. Agr. Expt. Sta. Bul. 448, May 1964; and Kenneth Duane. Economic Implications of the Regional Park System in Maricopa County. Bur. Business Serv. Ariz. State Univ., 1964.

generating an additional \$28,000 in secondary income before it finally leaks away to outside sources. Use of the Piceance Planning Unit by nonresident hunters thus produces about \$118,000 annually for local residents.

Based on these estimates, each dollar spent locally by nonresident hunters generates an average of \$0.74 of direct and indirect income. The ratio of expenditures to income is higher in the case of services and lower for purchase of goods. Each dollar spent for guide services, for example, returns \$1.32 in income; the same amount spent on clothing generates only \$0.26 in local income. This is because most services are produced locally while most goods are imported from other areas.

The relationship between expenditures of nonresident hunters and income generated by these expenditures is shown in table 5. About 20 percent of the local income comes from trespass fees, 16 percent from food purchases, 13 percent from land-use fees, 12 percent from lodging, 12 percent from the sale of incidentals, 10 percent from game storage and processing, 10 percent from the purchase of guide services, 4 percent from sales of hunting supplies and equipment, and 3 percent from gasoline and oil purchases. One-third of the income derived from hunters is accounted for by the sale of hunting privileges on private lands or access privileges across these lands. Another third comes from other types of services--lodging, game storage and processing, and guide services. Sales of goods produce the remaining third of local income generated by nonresident hunters.

In interpreting these figures, it should be remembered that the Piceance Planning Unit comprises less than 20 percent of the land in what is commonly referred to by hunters as the "Meeker Region," and good hunting is found throughout this region. Local income generated by hunting activities is several times the amount reported for the Piceance area--perhaps \$0.5 million. Hunting obviously is a major industry in this part of the State.

Elimination of Access Restraints

Other things remaining equal, the elimination of charges for access to blockaded public lands might be expected to result in an increase in the number of hunters using these lands. There is no clear-cut evidence, however, that intensity of use (hunters per square mile) in the Piceance Creek area is appreciably lower than in adjacent areas which have about the same ownership pattern, the same amount of hunting opportunities, but free access to public lands. Data available do not permit a rigorous analysis of the situation, but there are conceptual reasons for suspecting that lowering the access barriers will not encourage a great influx of hunters. The present system of rationing hunting opportunities is somewhat analogous to that used by airline companies. People who prefer and can afford deluxe accommodations ride first class; those with more modest preferences or less money ride in the economy section. All passengers reach the same destination in the same time, if not in the same comfort or luxury. Hunters who pay for the right to hunt on blockaded public lands (or private lands) are guaranteed a certain amount of freedom from encroachment by other hunters. They can plan and carry out their hunting activities in a more leisurely manner than hunters using accessible public lands. Since deer move

Table 5.--Relationship between annual expenditures of nonresident deer hunters using Piceance Planning Unit and income generated in local area, by type of expenditure: 1962-66

Item	Amount spent in local area		Extra income generated in local area	
	<u>Dollars</u>	<u>Percent</u>	<u>Dollars</u>	<u>Percent</u>
Transportation -----	9,800	6.1	3,223	2.7
Supplies & equipment --	17,150	10.7	4,481	3.8
Guide services -----	8,994	5.6	11,833	10.0
Game storage -----	13,346	8.4	12,291	10.4
Incidentals -----	29,400	18.4	13,539	11.5
Commercial lodging ----	14,700	9.2	14,506	12.3
Land-use fees -----	11,950	7.5	15,723	13.3
Food -----	36,750	23.1	19,341	16.4
Trespass fees -----	17,550	11.0	23,091	19.6
Total -----	159,640	100.0	118,028	100.0

freely throughout the entire Piceance Creek area, however, it is questionable whether the "first class" hunters have a significantly better chance of success in terms of deer killed. That they are willing to pay for preferential treatment does indicate that the quality of the hunting experience is enhanced by the privileges granted.

There also is a practical reason for doubting that large numbers of hunters will be attracted by a removal of access restraints on public lands. The Colorado Game, Fish, and Parks Department is responsible for keeping hunting pressure in line with deer population. This usually is accomplished through varying the length of season and size of bag limit--but more stringent methods can be and have been employed. If the deer kill in the Piceance Creek area appears excessive, the Department almost certainly will reduce the number of hunters or set a more stringent bag limit or both. If the provision of public access to blockaded public lands does not produce a significant increase in the number of hunters, it is unlikely to have much effect on the residential origin of hunters. 20/

20/ As noted previously, local hunters can utilize only a small fraction of the hunting opportunities afforded in the area. The remaining hunters must come from outside the local area.

With no change in the number or residence of hunters, the immediate or direct effect of a removal of access restraints will be an 11-percent (\$17,550) drop in local expenditures by nonresident hunters. Average local expenditures of this group will fall from \$65 per hunter to \$58.

Whether these savings will induce hunters to spend more on other local goods and services is difficult to predict. Some hunters on a fixed budget may have been forced to skimp on other items (e.g., lodging or incidentals) in order to pay a trespass fee. It is doubtful, however, that the elimination of trespass fees will have much effect on the spending habits of most hunters. 21/

Without trespass fees, total annual expenditures of nonresident hunters will amount to slightly over \$142,000. Because of the high income-generating capacity of expenditures on trespass fees (each \$1 spent yields \$1.32 in direct and indirect local income), the loss of \$17,550 in expenditures will result in a loss of \$23,091 (20 percent) in income. The average local income generated per dollar of expenditures will fall from \$0.74 to \$.67, and the average income produced per nonresident hunter will go from \$48 to \$39. Landowners will lose \$17,550 in direct income and the local economy will lose another \$5,541 in indirect income generated from trespass fees--assuming, of course, that the elimination of these charges does not affect the number, origin, or spending habits of hunters.

Increasing the Intensity of Hunting Use and Management

More intensive use and management of public lands for hunting could not only restore income lost through removal of access charges but actually increase income. As noted before, the number of nonresident hunters using the Piceance Creek area is determined primarily by the deer population. 22/ The size of the deer population, in turn, essentially depends on habitat conditions in the area studied.

The Bureau is in a position to bring about a substantial increase in the deer population of the Piceance Creek area. Most of the deer spend the spring and summer months on National Forest lands, where the food supply is relatively plentiful. The size of the herd is limited by habitat conditions in the fall and winter range, the great bulk of which is managed by BLM. The Bureau has operated within limited budgets to improve habitat conditions as a means of increasing deer numbers; some improvements for use by domestic livestock (such as stock ponds) have helped to increase the resident deer population and proper range management has assisted in some areas.

21/ This statement needs to be qualified. To the extent that user charges have attracted a clientele of prosperous, free-spending hunters into the area, the removal of these charges (and the privileges afforded by them) may encourage this type of hunter to seek opportunities elsewhere and result in a loss to the local economy.

22/ In the long run, the number of deer killed per hunter probably will decline enough to allow a modest increase in hunters with no change in deer numbers. At present, however, competition afforded by other areas in the immediate vicinity prevents any appreciable relaxation of quality standards held by hunters.

Figure 3 shows various combinations of numbers of nonresident deer hunters and average income generated per hunter required to maintain the present level of local income. Point A represents the present situation--2,400 nonresident hunters, each contributing an average of \$48 to the income of the local economy. If trespass fees are eliminated and average income contributed to the local economy falls to \$39 per hunter, 592 additional hunters (a 25-percent increase) will be required to maintain the local economy at its present level (point B).

While the addition of 592 nonresident hunters will restore all losses suffered by the local economy, it will not fully compensate landowners. Deer numbers and hunters per square mile would have to be more than doubled to accomplish this result (i.e., before income from land-use fees on private lands would equal income produced now from a combination of trespass and land-use fees). The net effect of moving from point A to point B, then, would be a transfer of income within the local economy from landowners to businessmen.

The 25-percent increase in numbers of deer and hunters required to offset loss, to the local economy, of trespass fees seems to be physically possible. This would require a joint program of access acquisition and more intensive management. How such a program could be financed and implemented needs to be examined.

Some Broader Economic Implications

Up to this point, the discussion has focused almost exclusively on local benefits resulting from hunting activities in the Piceance Creek area, and how these benefits would be changed by the provision of public access to blockaded public lands. Little has been said about costs or about the economic interests of other publics. Support or stabilization of local economies is not the only goal of public land management.

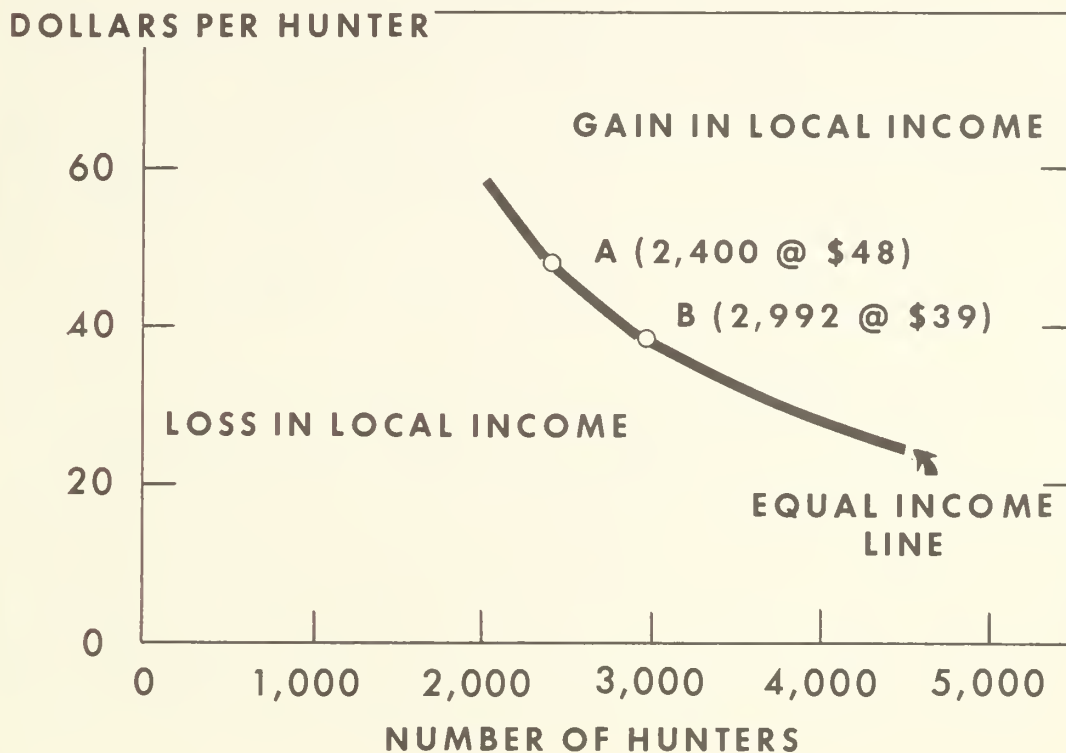
Who Gets What, and Who Pays for It?

The costs of producing and managing the resources upon which the hunting industry is based--deer and space--is shared initially by the Federal Government (Bureau of Land Management and Forest Service), the State Government (Colorado Game, Fish, and Parks Department), and private landowners. The Federal Government furnishes more than 80 percent of the deer habitat. The State Government manages the deer herd and enforces game laws.

Part of all of the costs incurred by landowners and the State Government are passed on to hunters in the form of land-use fees and hunting license fees. Landowners in the Piceance Creek area are estimated to receive almost \$12,000 annually from charges for hunting on private lands. The Colorado Game, Fish, and Parks Department has received about \$70,000 in recent years from the sale of licenses to hunters using this area. 23/

23/ Under a new fee schedule that went into effect July 1, 1967 (fees were raised to \$10 for Colorado residents and \$50 for out-of-State deer hunters) revenue will increase to \$87,000.

**VARIOUS COMBINATIONS OF NUMBERS OF NONRESIDENT HUNTERS AND
AVERAGE INCOME GENERATED PER HUNTER REQUIRED TO MAINTAIN
PRESENT LEVEL OF LOCAL INCOME: PICEANCE PLANNING UNIT, 1962-66**



U. S. DEPARTMENT OF AGRICULTURE

NEG. ERS 5797-68 (11)

ECONOMIC RESEARCH SERVICE

Figure 3

The Bureau, on the other hand, receives no income to offset its wildlife management costs, which are relatively minor. Cleaning up litter left by hunters is the only major expense directly attributable to hunting uses. ^{24/} A more vigorous and effective program (including provision of public access, improvement of deer habitat, and supervision of hunting uses) will require a substantial increase in appropriated funds or some way of transferring costs to users.

The Bureau does not have enough appropriated funds to meet the burgeoning demands of recreational users. Increased levying of fees more in line with costs of providing services is a general Government policy which applies as well in

^{24/} Hundreds of old campsites dot the ridges throughout the Piceance Creek area. The amount of refuse (deer hides and heads, cans, boxes, etc.) that accumulates at these sites is phenomenal. A BLM cleanup crew recently removed a large truckload of litter from a single campsite.

recreational fields. Most commercial users--stockmen, timber producers, mineral developers--pay at least a nominal charge for the use of public resources. The emergence of a private market dealing in access rights to (or hunting privileges on) public land shows that many hunters are both able and willing to pay for the privilege of hunting on these lands.

The Colorado Game, Fish, and Parks Department has used some of its license-fee revenue to provide public access to BLM lands in the Piceance Creek area. It recently purchased a large ranch expressly for this purpose. The land is leased to private landowners under a provision that it remain open to the public for recreational uses, and that other lands controlled by the lessees will not be used to block access to public lands. Since the Department does not have the power of eminent domain, it argues rather convincingly that other agencies are better equipped to secure public rights-of-way. Some sort of cost-sharing arrangement for financing an expanded program of recreational development, however, might be worked out between the Bureau and the Department.

Selecting an Appropriate Course of Action

The Piceance Creek situation exemplifies the problem of overlapping and sometimes conflicting responsibilities for providing public access to public lands. Where do local and State responsibilities end and the Bureau's responsibilities begin? County officials often are not eager to resolve conflicts over access to public lands in their local community. ^{25/} The Colorado Game, Fish, and Parks Department does provide moral, and some financial, support to programs for improved public access. The Bureau has a broad responsibility--to landowners, sportsmen, and the public at large. Working with and through other public and private entities, the Bureau could help dampen the political repercussions of unpopular actions.

Deciding where and how to provide public access is only part of the problem. Since nearly all BLM lands in the study area are contiguous, and since they are already served by a fairly adequate system of roads, the decision is reduced essentially to a choice between securing public rights-of-way through private lands or bypassing blockaded portions of the road network. This decision is dictated in large measure by physical factors; an engineering study would answer most of the questions.

Managing the uses generated by public access is a more difficult task, especially when management decisions must be integrated with access decisions. Providing more access without more intensive management probably would create more problems than it would solve. Allowing hunters to gain access to an area where it is virtually impossible for them to distinguish between public and private lands, for example, is inviting trouble. Similarly, the failure adequately to supervise and regulate hunting uses of public lands could adversely affect other users and result in a deterioration of public resources.

^{25/} The local government seems to be firmly on the side of landowners. Landowners vote and pay taxes in the area--most of the hunters do not.

Present management activities in the Piceance Creek area are focused primarily on the production of livestock forage, a use that returns less than \$12,000 annually in grazing fees. Hunters apparently are willing to pay more than this amount for access to one-third of these same lands. The need to find ways to better associate costs and benefits arising from these activities is the real crux of the public access problem in this area.

Two ways in particular should be explored. The Bureau could establish a system of hunter fees similar to that used on the north unit of the Kaibab National Forest. A \$5 fee is collected from hunters and deposited in a special fund used for habitat development. A fee of this amount would produce about \$13,000 annually in the Piceance Creek area, and could be used for access purchases as well as for habitat improvement.

A second possibility would be to lease the area to the Colorado Game, Fish, and Parks Department, or to a sportsmen's organization. This arrangement presumably would produce more revenue for BLM than presently is being realized from grazing privileges for domestic livestock. Part of this revenue could be used for habitat improvement and acquisition of better public access. This would not necessarily eliminate the grazing of domestic livestock in the area.

THE CALIENTE MOUNTAIN AREA: FIVE YEARS OF FRUSTRATION

Introduction

The Caliente area, a rugged, mountainous expanse of public domain lands about 100 miles northwest of Los Angeles, has the distinction of being the first Federal-State Cooperative Land and Wildlife Management Area in the Nation. It is distinguished also as the only BLM holding specifically dedicated to public recreation that lacks any means of vehicular public access.

Vigorous and sustained efforts over the past 5 years to secure public access to this area show how difficult it is to accommodate changing land uses, even when management objectives are clearly defined and reasonably carried out.

Background of the Caliente Withdrawal

The search for effective ways of ensuring that BLM lands in California will remain available for public recreational uses in the future dates back to the early 1940's. After exploring a number of alternatives, the California Department of Fish and Game (CDF&G) applied for a withdrawal of certain lands under the provisions of the Coordination Act of March 10, 1934 26/ as amended by the act of August 14, 1946. 27/ In accordance with procedures under this act, the U.S. Fish and Wildlife Service filed an application for the Caliente withdrawal on December 18, 1956. Amendments to the application (permitting mining and mineral leasing in the withdrawal area and clarifying the Bureau's management responsibilities) were filed in January and November of 1957. A public hearing on the proposal was held at Taft, Calif., in October 1957. In March 1961, interested Californians, State officials, and members of the California congressional delegation met in Washington with Interior Under Secretary James K. Carr to outline program possibilities. On April 7, 1961, Secretary Udall designated 58,868 acres of BLM lands in the Caliente Mountain Range as a National Cooperative Land and Wildlife Management Area. Official notice of the withdrawal was published in the Federal Register on April 12, 1961.

Lands withdrawn under the Coordination Act are exempt from applications under the nonmineral public land laws and from dispositions under the Homestead, Desert Land, and Script Selection Laws. They are open, however, to mining, mineral leasing, grazing, and other uses compatible with the development of wildlife and recreational resources. The withdrawals continue to be administered by BLM under a cooperative program with CDF&G.

After the Caliente National Cooperative Land and Wildlife Management Area was approved, 24 similar withdrawals, totaling approximately 850,000 acres, were established in California. The success of these initial efforts prompted the CDF&G to propose a massive withdrawal of BLM lands. At this point, the Department of the Interior began to have second thoughts about the matter of Caliente-type withdrawals, for reasons outlined in a letter dated September 6, 1963, from

26/ 48 Stat. 401.

27/ 60 Stat. 1080.

"Under Secretary Carr has asked me to reply to your letter of July 14, wherein you inquire as to the status of policy and procedural questions now under consideration by this Department relating to the proposals made by the California Department of Fish and Game for the additional withdrawal of 5.2 million acres of public lands

"Entirely apart from the merits of the individual areas you have proposed for withdrawal, we are confronted with the sobering fact that the cumulative total acreage in withdrawals already approved, partially acted upon, or pending represents a substantial part of the remaining public domain in California. To withdraw more than 6 million acres from all other forms of use or entry would most certainly lead to allegation of a 'lock-up' of resources. As you may know, this is a very delicately balanced issue with our congressional committees and requires most careful handling

"For these reasons, we have been exploring ways and means whereby our joint objective of protecting the lands for their wildlife value may be accomplished by means which are less drastic and more flexible than the withdrawal procedure used heretofore."

CDF&G continued to press for more withdrawals, however, and Charles H. Stoddard, former Director of the Bureau, reiterated the Bureau's position in a letter dated May 5, 1964, to the Director of the California Department of Fish and Game. After noting new legislation pending in Congress, Mr. Stoddard gives this response to three applications for withdrawals:

"We now have doubts about the need for, or the desirability of, the Caliente-type withdrawal, of which the three applications in question would be examples. We favor protective withdrawals where they are needed; we also believe that withdrawals and management plans must be coordinated with the long-range goals for the public lands. The joint memorandum approved by you and our State Director Neal Nelson in May, 1963, provides an excellent basis for the completion of joint resource management programs on many local areas of public lands in California. This and other types of arrangements may prove more satisfactory than the Caliente-type withdrawal in achieving long-range protection and development of all public lands having significant outdoor recreation, wildlife, and other public values."

That California officials were not completely reassured of the Bureau's ability to retain and manage recreational lands, even after the passage of the Classification and Multiple Use Act, is indicated by the following excerpt from a letter dated October 29, 1965, to the State Director from the Director of the California Department of Fish and Game:

28/ Unless otherwise noted, all of the letters, memos, reports, etc. quoted in this case study are from the files of the BLM State Office in Sacramento or the BLM District Office in Bakersfield.

"After a number of requests were withdrawn as National Cooperative Land and Wildlife Management Areas, we were informed that further withdrawals of this type were not necessary as, at that time, the proposed legislation, if enacted, would allow retention of the proposed withdrawals for multiple purpose use

"Now that the Bureau will be moving ahead with its classification, we would like to again bring these land requests to Bureau's attention. We have previously furnished the write-ups for each individual area, including: legal descriptions, township plats and justification."

The implications of continued pressure for Caliente-type withdrawals are clear. Lack of public confidence in the ability of BLM to protect and develop recreational lands has spurred State agencies to assume the role of protector of the public interest.

The Physical Setting

The Caliente area (fig. 4) includes the greater part of the Caliente Range which is a portion of the Coastal Mountain Range of California. The area is located in southeastern San Luis Obispo County and is administered by the Bakersfield District.

The Caliente area is bordered on the south by the Cuyama Valley and on the north by the Corrizo Plain. Elevations in the area range from 1,000 feet to slightly over 5,000 feet. Caliente Mountain, in the center of the area, has an elevation of 5,104 feet and can be seen for many miles in all directions.

The southern slopes are very steep (40 percent is common) and barren of vegetation, with many sedimentary rock outcroppings in the western portion. The northern slopes are less steep and have some light vegetation. The valleys support a fair cover of grass and shrubs. Scrub juniper is scattered throughout the valleys and northern slopes. There is no merchantable timber in the area.

Annual rainfall varies with elevation, averaging 6 inches over the entire area. Precipitation consists mainly of winter rains, usually in the form of severe squalls, accompanied by runoff. Mountain slopes are subject to severe erosion.

Current land uses in the area include oil production, grazing, and some recreation. Most of the area is under oil and gas leases and there are a number of producing oil wells in the southwestern portion. A major oil company has constructed a refinery adjacent to the largest oil field.

Public lands are used for seasonal grazing under BLM Section 15 leases by six ranchers located in the Cuyama Valley and the Corrizo Plain. Estimated forage production on these lands ranges from 2.75 to 10 acres per AUM. Annual grazing fees amount to around \$5,000, or about 9¢ per acre.

Recreational uses at present are confined to hunting and hiking. Both of these uses are limited by lack of public access into the area. The Caliente is

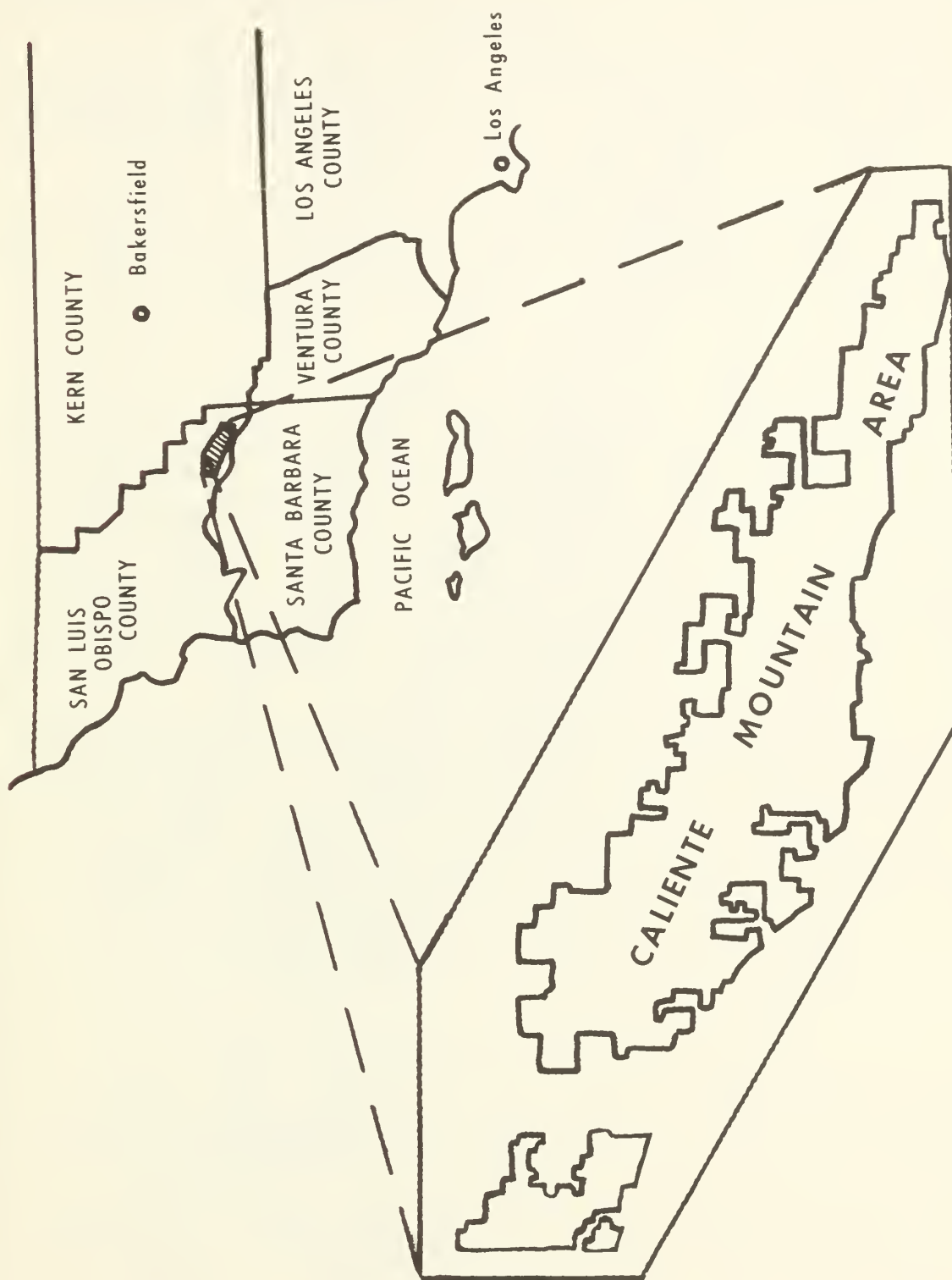


Figure 4.--General Location of the Caliente National Land and Wildlife Management Area: Bakersfield District, California, 1966.

mainly an upland small game area, although it supports a small population of deer. Game birds and animals known to inhabit the area include mourning doves, valley quail, chukar partridge, cottontail rabbits, jackrabbits, and deer. Game populations are restricted by scarcity of water.

The only hunting in the area is done by grazing lessees and oil company employees, who control vehicular access. No figures are available regarding the number of game birds killed in the area. Annual deer kill has ranged from 7 to 17 in recent years.

Caliente Mountain is the highest point in San Luis Obispo County and commands a view of hundreds of square miles of mountains, valleys, and plains. It is included on the "100 Peaks" list of the Los Angeles Chapter of the Sierra Club. Some individuals and groups climb this mountain each year.

The Current Access Situation

The landownership pattern and road system in the Caliente area is shown in figure 5. Highway 166 passes through Cuyama Valley and parallels the south boundary of the Caliente unit for a distance of about 30 miles. An improved county road passes through Corrizo Plain and parallels the north side of the area. No portion of the unit borders on either of these public roads, although Highway 166 is within one-half mile of the southeastern tip. The area is completely surrounded by private lands, except for a short strip on the western edge which borders a portion of the Los Padres National Forest. All access roads leading into the area are controlled by private landowners, and these roads are closed to the public. 29/

Concern over lack of public access to the Caliente area predates the withdrawal, but has become more intense since that time. The access situation is noted frequently in correspondence and reports prepared in the initial phases of the withdrawal procedure. A BLM report in 1956, for example notes that:

"Privately owned range lands adjacent to the involved land on both the north and south sides are fenced and the gates are either locked or posted The irregular land pattern and extremely rough terrain of the western portion will contribute to management problems and will probably lead to conflicts between sportsmen and ranchers."

A press release on April 7, 1961, announcing the Caliente withdrawal, pointed out that "Good access into the area is still a problem."

Sportsmen's organizations and other recreational groups are demanding that decisive action be taken by the Bureau to provide public access to the Caliente area. Resolutions to this effect have been passed by a number of these groups.

29/ The parcel of national forest land bordering the Caliente area on the west also lacks vehicular public access. Roads into the forest cross private lands in the valleys and are not open to the general public.

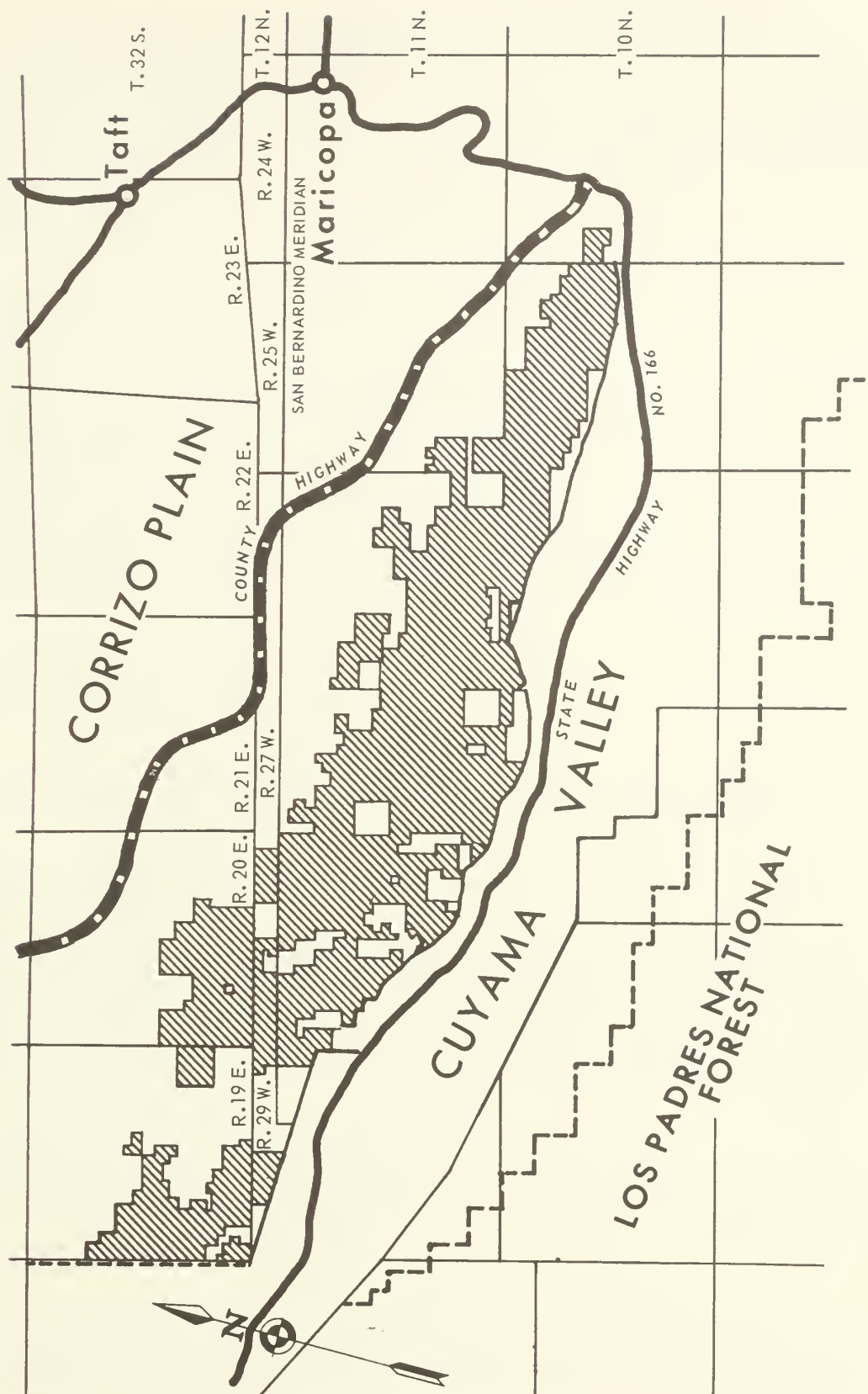


Figure 5.--Location of Caliente National Cooperative Land and Wildlife Management Area with Respect to Public Roads: Bakersfield District, California, 1961.

History of Access Negotiations

That the problem has not yet been resolved does not signify a lack of interest or effort on the part of the Bureau personnel. Information in the files of the Bakersfield District Office tells the story of efforts to negotiate with landowners for a public right-of-way into the Caliente area. This story is worth repeating, for it points up the difficulty of trying to align two conflicting sets of institutions--one prescribing rights in private property and the other dictating the rights to use public property--to produce a reasonably amicable solution to a controversial problem.

Preliminary Plans

The task of securing public access into the Caliente area began a few months after the withdrawal was approved. A meeting attended by personnel of the Bureau and the California Department of Fish and Game was held in February of 1962. "The purpose of the meeting," according to a file memo, "was to discuss the possibilities of an access road along the top of the Caliente Range and to determine probable routes by which access to the National Reserve lands could be obtained through deeded lands which completely isolate it." Several alternate routes were discussed, and doubts were expressed about the willingness of key landowners to negotiate.

Another joint meeting with CDF&G was held in September 1962, to discuss a management plan for the Caliente unit. The access problem again was thoroughly discussed.

In October 1962, another joint meeting was held to discuss a route to be traversed by a proposed access road into the Caliente Cooperative Management Area. This meeting produced the following specific conclusions:

"(1) An access road should be constructed along the southernmost boundary of the management area on National Reserve Lands. The road should extend from the eastern end of the area, in a northwesterly direction to a point south of Caliente Peak. The access road will cross several existing roads and trails running up the canyons to the top of the mountains within the management area. These roads will provide considerable movement within the area for the public. Without the proposed access road, however, these roads and trails are blocked to the public by private individuals on their deeded lands.

"(2) The point of origin of the access road should be where the county line common to San Luis Obispo and Kern Counties crosses Highway 166. To accomplish this, an easement will have to be obtained through the NW $\frac{1}{4}$ of Section 19, T. 10 N., R. 24 W., S.B.M.

"(3) The BLM should obtain the easement required.

"(4) The south boundary line should be established on the ground in the near future, so that a traverse map can be drawn up. The Department of Fish and Game will furnish a man to help with the field work for this if necessary.

"(5) There is a sufficient number of good roads throughout the remainder of the management area without new construction if easements can be obtained through private lands surrounding it.

"(6) The Department of Fish and Game has funds available for construction of the road when the easements and a traverse route are obtained."

Negotiations

Negotiations with landowners on the Cuyama Valley side of the unit (bordering on Highway 166) were launched in late 1962. All of the owners refused to donate or sell a right-of-way. In a file memo of January 25, 1963, the BLM negotiator describes an unsuccessful attempt to negotiate with a small, nonresident owner on the eastern tip of the area. He adds: "Loss of this last access possibility closes off the south side and the east end of the Caliente Mountain from public access. If access is obtained it will have to be by legal methods." This is the first of many instances in which condemnation procedure is alluded to or openly recommended.

By June 1963, a Wildlife Management Plan for the Caliente unit was completed by BLM and CDF&G. The plan lists three major management problems:

- "a. There is no vehicular public access to the area.
- "b. Lack of water supply is a limiting factor for upland game species.
- "c. Much of the withdrawal area is unsurveyed and not posted. [Note: this problem is confined mainly to the Corrizo Plain side of the unit.] Trespass problems may arise. Irregular pattern of withdrawal area may make management of parts of the area difficult."

In its "proposed developments" section, the plan outlines public access requirements:

"Legal public access to the management area is needed and can best serve the area if provided over the present existing road west of Morales Canyon. [Note: this is a hard-surfaced road constructed by an oil company to service its oil refinery.] Additional access may be needed in the southeastern portion of the area, and could be provided by acquiring an existing private road in T. 10 N., R. 24 W. This development has been proposed as a Wildlife Conservation Board project.

"Access within the boundaries is generally adequate, and will not require any large outlay of funds for development. Existing roads and trails will require some improvement which can be done for an amount not to exceed \$2,000."

On June 20, 1963, at a joint meeting it was agreed that access negotiations would be "diligently pursued" by the Bureau "in accordance with the authority granted by the Master Agreement between the CDF&G and the BLM." During a similar meeting in September, however, the question of agency responsibility for

providing access came up for discussion: "Responsibility as to who will acquire access needs to be specifically delegated. It is now the whole responsibility of the Bureau to acquire access."

A Lull and a New Approach

There appeared to be a lull in access negotiations during most of 1964. All of the larger landowners and most of the smaller ones had been approached at least once, with no success. Sportsmen's organizations were growing more impatient with the situation, and more insistent that something be done to resolve the deadlock in negotiations. The Bureau's access negotiator attended all except three of the 20 quarterly meetings of the Sportsmen's Council of Central California held during 1962-66, and reported on the Caliente access situation at nearly every meeting he attended. The Council represents more than 40 organizations from 13 counties. During a meeting held on February 8-9, 1964, the Chairman of the Council's Public Access Committee voiced dissatisfaction with progress being made on the Caliente access problem. An active member of the Council, who was at that time a wildlife representative on the California and National BLM Advisory Boards, agreed to look into the matter.

A joint meeting with the California Department of Fish and Game on February 19, 1965, again focused on the chronic problem of access to the Caliente. A Department representative reported that five rain traps, called water guzzlers, were installed in the area during FY 1964-65 and that nine guzzlers were planned for FY 1965-66. ^{30/} He added, however, "Public access has been a problem so no more development work is planned by CDF&G after 1966 until access is obtained."

A memo written June 14, 1965, from the District Manager to the State Director notes that "Public access [to the Caliente has] not yet [been] obtained although discussions [are] under way for access at the Northwest and the Southwest corner[s] of the unit."

A new approach to the access question was discussed at a meeting with CDF&G representatives on June 17, 1965. It was noted that some of the newer owners along the northern border of the Caliente unit were willing to discuss the problem, but feared the consequences of unlimited public access. Heavy population pressures in this part of the State have resulted in frequent acts of vandalism on both public and private lands. It was suggested that the San Luis Obispo County Board of Supervisors be sounded out on the idea of an ordinance regulating vehicular travel in the Caliente unit. This, it was felt, might help to break the deadlock in access negotiations. A representative of the CDF&G acted on the matter and reported by letter dated October 20, 1965 to the BLM District Manager: "We have been in contact with [name of official], Administrator for the county. He stated that there should be no objection by the Board to enact [ing] such an ordinance."

^{30/} A rain trap or guzzler is a water catchment and storage device, consisting of an asphalt or aluminum catchment apron and a large underground storage tank, used to improve habitat for upland game birds. A ramp is built leading into the tank so animals may enter and use the water at the same level it occupies in the tank.

Even before this assurance was received, the Bureau attempted to use the idea of a vehicular control ordinance in negotiating for access. On September 29, 1965, the Bakersfield District Manager wrote to the owners of a large ranch bordering the Caliente unit:

"Reference is made to . . . [BLM negotiator's] discussion with . . . [one of the landowners] on September 8, 1965, regarding public access across your private lands on the . . . [oil company's] Morales Canyon road.

"This access would be from Highway 166 across your private lands to public land in Morales Canyon on the Caliente Mountains. Our plan in this access would be to first establish vehicular control of roads in the Caliente Unit by allowing vehicular travel only on a designated road. This vehicular control would be attained by county ordinance and enforced through local courts."

The reply, dated November 3, was short and firm: ". . . I am advising you at this time that . . . [names of landowners] did not decide to grant any access across any portion of their land."

Renewed Efforts

The tempo of access negotiations accelerated during the final two months of 1965. Key landowners were contacted again, and again refused to negotiate. In a file memo of January 11, 1966, the BLM negotiator reported a particularly frustrating day of access negotiation with two large owners. One owner, a large land company, was willing to negotiate, but was forced to retreat under pressure from the other owner, who was in the process of purchasing some land from the first owner. The negotiator reported that he told the owners: "We intend to get access into the Caliente, and it looks like our next step will be condemnation across someone along the valley."

The BLM negotiator formally recommended condemnation action the following day in a memo to the District Manager:

"Various attempts have been made to obtain access into this unit since . . . 1959.

"Adjacent landowners who have refused outright to grant access are: [four names listed]

"Adjacent landowners who are selling holdings and have dodged negotiations after repeated contacts and trips over the area are: [two names listed]

"There would be a remote possibility of obtaining access on the north and east side of the Caliente from the Corrizo Plains side. This access would entail going over some five to seven miles of private land so it is my recommendation that further efforts of negotiation cease.

"There is considerable public pressure to obtain access into the Caliente unit so my recommendation is to resort to condemnation."

This recommendation apparently was accepted by the District Manager and the California Department of Fish and Game. The annual report on Cooperative Land and Wildlife Management Areas in the Bakersfield District, prepared by the two agencies and submitted to the State BLM Director on March 7, 1966, contains the following statement regarding access plans for the Caliente: "All efforts at public access negotiation have failed in this unit. Plans are now being correlated between BLM, CDF&G, and the California Wildlife Board to obtain access by condemnation."

These plans were revealed at a meeting of the Sportsmen's Council of Central California held on March 5 and 6, 1966. The Council enthusiastically supported a tougher stand on the Caliente access problem in a resolution adopted March 6. The resolution reads, in part, "that the Sportsmen's Council of Central California go on record favoring acquisition of access to this unit by whatever lawful means are available through authority of the Bureau of Land Management and/or the Board of Supervisors of San Luis Obispo County." The San Luis Obispo Sportsmen's Association reaffirmed their support in a letter of March 9 to the Bakersfield District Manager:

"We understand that none of the landowners have been willing to cooperate in this matter and you plan to start condemnation proceedings in order to gain public access.

"Our organization has been interested in this area for several years and you can count on our support. Please let us know if there is anything we can do to aid you in this endeavor."

Subsequent events made it clear, however, that the Bureau was still reluctant to actually use the power of eminent domain in bringing about a quick settlement of the Caliente access problem. A new round of access negotiations followed the public announcement that it might be necessary to resort to condemnation. In a memo to the District Manager, dated April 4, 1966, the BLM negotiator wrote:

"It is my recommendation that an appraisal be scheduled as soon as possible for the site we have selected for access from Highway 166 in Cuyama Valley to the public lands in the SW corner of the Caliente Unit.

". . . [Our] next procedure will be to then negotiate on a firm basis with both landowners. If both refuse, then condemnation is the last resort."

The appraisal was requested, and a preliminary estimate of the market value of the land in question was sent to the District Manager on April 18.

The State Advisory Board Lends Its Support

The mounting pressure from sportsmen's organizations and the continued stalemate in voluntary negotiations for access apparently were leading to a showdown. The Bureau quite naturally wished to muster as much support as possible before it became necessary to initiate condemnation action.

Additional support for a tougher access policy came out of a California State BLM Advisory Board meeting held in Sacramento on May 17-18, 1966. The second day of this meeting was devoted to a discussion of public access problems in California. The Caliente access situation played a prominent role in this discussion. A number of special committees were then assigned the task of drawing up resolutions to be acted upon by the Board. The Committee on Access prepared the following resolution, which was formally adopted by the State Advisory Board:

"Acquisition of legal access should have the highest priority, second only to exchange and blocking up of lands in the management plan.

"BLM should have the funds for development of access.

"Access roads should not be built until BLM can provide resource management, including, but not limited to, sanitation, litter control, policing, boundary marking, fencing, etc.

"BLM should cooperate and coordinate with Federal and local agencies [to ensure that public lands are available for public use].

"The committee recommends procedures using eminent domain. . . . It is suggested that BLM negotiate for 1 year. If no negotiation is possible, start proceedings of eminent domain."

The California State Office prepared a report that evaluated the significance of this Advisory Board meeting and made recommendations to the Washington office. The report noted the "air of emergency" that prevailed at this meeting, and outlined the critical problems facing the Bureau in the field of recreational management:

"Pressures from population growth and existing programs of . . . State and other Federal agencies require BLM to act now.

"Failure to act now will continue our somewhat passive custodial program and continue the action by other agencies or private individuals to acquire the public lands plus exchanges to further their own activities."

More Negotiations and a Possible Breakthrough

Condemnation was postponed and negotiations with private landowners continued throughout the summer of 1966. On August 8, the BLM access negotiator wrote a detailed memo to the Bakersfield District Manager on the status of these negotiations. Of 11 owners contacted, 3 indicated that they might be willing to consider selling a public right-of-way across their properties. The others opposed any form of public access.

Many owners expressed fears that public access would result in damage to private property. One owner said that he "would not negotiate with BLM for access as [he] had enough trouble with trespassers now without asking for more trouble by letting a public road go through [his] property." Another complained of "people shooting up livestock and machinery" and feared that public access

would allow people to "get at them from all directions." A third landowner noted that Indian paintings, petroglyphs, and fossil beds were common in the area, especially on the northern slope of Caliente Mountain. "Most of the paintings and carvings are practically gone now--defaced or carried off by vandals and souvenir-hunters; the only good paintings remaining have been well protected from the general public."

The memo mentions attempts to quiet the fears of landowners by agreeing to fence both sides of access roads and to limit the movement of people through a vehicular control ordinance. While there is no explicit reference to eminent domain, it is apparent that the subject came up during negotiations with some of the owners. One owner who showed some willingness to negotiate "didn't like to give in," but felt that "access would be acquired sooner or later and the proposed route [on the boundary between two ownerships] was a logical one."

The memo ended with a recommendation that efforts be concentrated on three possible points of access. The most desirable access route (first proposed in a meeting with the CDF&G in 1962) would require a right-of-way through the NW¼ of sec. 19, T. 10 N., R. 24 W., S.B.M. (San Bernardino Meridian).

The second route would start in sec. 31, T. 12 N., R. 27 W., S.B.M. and proceed south to sec. 7, T. 11 N., R. 27 W., over property owned by one of the largest land companies in the West. BLM hoped that a land exchange could be worked out, since 240 acres of public lands in the Caliente unit lie within an area owned by the company.

The third proposed route would start at Highway 166 and proceed northerly along the boundary between two ranches. This route would benefit both owners, since the property line would be surveyed and fenced as part of the bargain.

Sportsmen's organizations continued to press for more and better public access to public lands. On October 2, 1966, the California Wildlife Federation adopted a resolution calling for an amendment to the Land and Water Conservation Fund Act of 1965 "to provide that money from the Fund can be used for the purchase of lands or the acquisition of easements for the purpose of providing public access to publicly-owned lands . . ." The resolution noted that "more and more private landowners each year are controlling access to public lands, including Federal properties, by charging fees to enter or cross their lands, or by leasing exclusive recreational rights on their lands, or prohibiting access, thereby excluding members of the public or causing them extra hardship and expense . . ."

By late November 1966, negotiations for the third proposed access route had reached the point where owners of the two adjacent ranches agreed to allow a BLM survey crew to enter the area to establish a boundary line and select a feasible route for an access road. The crew accomplished this task the following month.

This is where things stood in early 1967. After 5 years of efforts to secure public access into the Caliente, some progress seems to have been made during the last few months of 1966. This progress was made, however, only after the Bureau was confronted by the sportsmen's groups. The Bureau tried to devise ways to protect landowners against an "invasion" by recreationists and proposed

to use condemnation to secure public access. While the outcome is still in doubt, some rather important lessons can be learned from the Caliente experience.

What Went Wrong--and Why?

From the time of the Caliente withdrawal until the present, the question of whether public access should be provided has never been an issue. The very nature and purpose of the withdrawal, as expressed in numerous official documents and pronouncements, makes public access a necessity. The question, then, is not if public access should be provided, but how it can best be accomplished. 31/

The Bakersfield District Office appears to have tried just about everything--short of condemnation--to acquire public access into the Caliente unit. It has--

. . . maintained a close working relationship with the California Department of Fish and Game and with other State and local agencies.

. . . kept sportsmen's organizations well informed about efforts to secure access.

. . . conducted repeated and prolonged negotiations with private landowners bordering the Caliente unit.

. . . brought the problem to the attention of the State BLM Office.

The California State Office and the State Advisory Board have expressed deep concern about the problem, and have strongly recommended that policies relating to the provision of public access be clarified and strengthened.

That a few individuals have been able to resist, for an extended period of time, the combined efforts of the Bureau, the California Department of Fish and Game, and a large number of sportsmen's organizations to secure public access into an area expressly dedicated to public uses, demonstrates the limitations of the Bureau's "working rules" for attaining announced policy objectives in the field of outdoor recreation. More recently, the Bureau has undertaken general purpose planning, which includes consideration of outdoor recreation on public lands.

Sorting Out Intergovernmental Responsibilities

In seeking a solution to the Caliente access problem, the BLM District Office has made a serious effort to work with and through local and State units of government. While the resulting arrangements for sharing responsibilities are not as explicit as might be desired, they represent a big step in the right direction. The local government tentatively has agreed to provide and enforce an ordinance restricting vehicular traffic in the Caliente area. The State

31/ In this respect, the Caliente problem is less complicated than are those occurring on most BLM lands (e.g., the Piceance Creek area) where basic management questions remain unanswered.

Government has agreed to provide technical and financial assistance for the development of recreational resources (including the construction of access roads). The Bureau, however, is left with the toughest and most critical task--that of acquiring public rights-of-way.

The ties established and maintained with other public agencies no doubt will pay large dividends in the field of public relations. But they have not got the Bureau "off the hook" with respect to the access issue. The responsibility for initial action still rests with the Bureau, and here it is likely to remain. There is need, then, to examine the Bureau's own resources--legal, financial, and human--to see how these resources can be used more effectively to meet the challenge.

Institutional Imperfections

The refusal of private landowners to voluntarily grant a public right-of-way into the Caliente area seems to stem from the fear that public access inevitably will result in trespass and vandalism on adjacent private properties. At least this is the most common explanation offered by landowners themselves. They apparently also feel that the Bureau will not (or cannot) compensate them for losses indirectly associated with public access.

While such expectations of landowners may be exaggerated, the general validity of the objections is acknowledged by the Bureau negotiator, who has tried to devise means of preventing damages to private property (fencing, posting, vehicular control ordinances, etc.). There is no way at present, however, for the Bureau to assume liability for offsite damages indirectly resulting from the use of public lands for recreational purposes. Public access into the Caliente unit undoubtedly will cause inconvenience and expense to landowners along the edges of the unit, whether or not the access route crosses their properties. As one small landowner, a Los Angeles resident, put it: "I came out here and bought this land to get away from people."

This places the Bureau in a difficult position. The lands in question are public property and belong to all of the people. Moreover, they have been designated officially as a National Land and Wildlife Cooperative Area, with the explicit understanding that the area will be used by the general public. The area is near large population centers and suitable for a variety of extensive recreational uses.

It is unfair that private landowners should be forced to incur costs resulting from the use of public lands; it is unfair likewise that the public should be forced to relinquish control of its own lands for the benefit of private interests. About the only thing the Bureau can do in this situation, at present, is to be as generous as regulations permit in negotiations with landowners, yet mindful of its responsibilities to all segments of the public. This attitude apparently was adopted in the Caliente negotiations. If negotiation fails, as it did, the Bureau is faced with two alternatives: It can look to the courts for a solution (i.e., initiate condemnation action); or it can seek to modify its procedures and regulations to fit the realities of the situation (i.e., seek new ways of reaching voluntary settlements).

The Bureau is anxious to avoid condemnation--at practically any cost. The time and money already invested in access negotiations exceeds, by a fairly wide margin, the estimated costs of acquiring rights-of-way and constructing roads. Since the Bureau has reason to be concerned with political, as well as economic, costs of resolving access conflicts, it might be well advised to shy away from solutions involving too much coercion.

This is not to say that it will never be necessary or desirable to use the power of eminent domain. But there is need to find some "middle ground" between fruitless voluntary negotiations and recourse to the courts, both of which are too time-consuming and costly in light of the Bureau's problems and opportunities in the field of recreational management.

Some Economic Implications

Due to the nature and intent of the Caliente withdrawal, conventional economic criteria play a less important role in decisions regarding public access than ordinarily would be the case. No elaborate cost-benefit analysis is needed to justify a decision already made, i.e., that public access is essential for the proper use and management of the area. Nevertheless, it would not be too difficult to provide such a justification, if the need arose. So long as the impasse over public access exists, resources in the Caliente unit cannot be used efficiently or developed to their highest potential. The costs of not using and developing these lands for recreational purposes are difficult to compute (since there is no history of use on which to base these estimates), but they are certain to be substantial. Millions of potential users live within a few hours' drive of this area.

The important thing is that benefits to the public (of providing access to these lands) appear to exceed costs to adjacent private landowners. It should be possible to compensate these owners and still retain a sizable net benefit for the public. The problem, then, is how the compensation will be paid and by whom.

Policy Implications

The Caliente situation raises a simple, but extremely important, policy question: Is the Bureau willing and able to carry out its new responsibilities in the field of outdoor recreation? Official pronouncements have failed to dispel the widely shared belief that the Bureau is incapable of effectively resisting pressures from commercial user groups. The nature and background of the Caliente problem offers the Bureau an excellent opportunity to refute this impression.

TOWARD A WORKABLE SOLUTION

Selecting an appropriate course of action for resolving access conflicts is analogous to constructing and solving a set of mathematical equations. To construct the equations, it is necessary to develop a conceptual framework that will help to identify the various parts of the problem and to show how these parts are related to one another. To solve the equations, it is necessary to substitute facts for ideas, and to see if the conceptual relationships hold in real situations. If the results provide a better understanding of the process producing access conflicts, they also provide opportunities for remedial action.

Economic Considerations

Two aspects of the public access controversy are particularly important from an economic standpoint: (a) the degree of accessibility and (b) the methods used to restrict or control access. The first determines the extent to which public lands can be used by various segments of the public; the second determines how the costs and benefits of these uses are distributed among various segments of the public. According to traditional economic principles, optimum use of resources is achieved when the marginal values of all uses are equal and when the prices paid by users (directly or indirectly) are equal to the marginal costs of supplying these resources. While the Bureau's management objectives are not based exclusively on this concept of optimum use, it may be useful to explore the economic consequences of access restraints.

Efficient Use of Public Resources

There is a sharp contrast between the degree of accessibility to the two case-study areas, and hence, the use of the areas for recreational purposes. Lands in the blockaded portion of the Piceance Creek area are accessible to any hunter who can and will pay for the privilege of crossing private lands. There is no clear evidence that this monetary restraint has reduced substantially the use of these lands by hunters. Hunting pressure in the blockaded area, in other words, seems to be roughly in line with habitat conditions and deer numbers. ^{32/} On this basis, one might argue that access barriers thrown up by private landowners have not interfered greatly with the efficient use of public resources.

The same situation does not hold in the Caliente area. The public is barred completely from utilizing recreational opportunities on these lands. Most of these opportunities simply are wasted. The low degree of accessibility in this case obviously has brought about considerable inefficiency in the use of public resources.

It would be simpler, and perhaps more comforting, to stop at this point. But the methods used to allocate access also are important, not only because

^{32/} The extent to which access restraints have inhibited the improvement of habitat conditions and the increase in deer numbers is discussed below.

they affect the distribution of income, but because they have a feedback effect on the efficiency of resource use. This is most apparent in the Caliente area, where lack of public access has prevented development of these lands for recreational uses. The Bureau and the California Department of Fish and Game have suspended all efforts to improve wildlife habitat or to construct recreational facilities until public access is secured into the area. The reasons for this decision are obvious; it is not so obvious, perhaps, that development opportunities in the blockaded part of the Piceance Creek area also are restricted, and for much the same reason. Any public investment in recreational development in this area either would be wasted or subject to capture by private landowners controlling access. That wildlife resources in the Piceance unit apparently are being utilized in a reasonably efficient manner at present must be regarded as a happy coincidence. Without control of access, the Bureau is impotent in the area of recreational management and development.

Access restraints over which the Bureau has no control do have an adverse effect on the efficient use and management of public resources. Moreover, the effects of these restraints on income distribution transcend the narrow issue of economic efficiency and lead into the realm of welfare economics. It may be useful, in this context, to appraise access restraints as a means of rationing recreational opportunities, and the income generated by these opportunities, among various individuals and groups.

Incidence of Costs and Benefits

Rising marginal costs and declining marginal utilities will occur as public lands are used and managed more intensively for recreational purposes. ^{33/} At some level of recreational use it will be both necessary and desirable, from the standpoint of recreationists as well as society as a whole, to ration recreational opportunities on public lands. What type of rationing system should be imposed, and who should administer it? The answer to this question will be determined through the political process. But the major prize at stake is economic advantage.

The Piceance Creek situation illustrates the economic consequences resulting from one form of rationing. The system, here, seems to be based on a single criterion--ability to pay. Two related, but quite distinct, issues are raised by this situation: Should hunting opportunities on public lands be allocated on the basis of ability to pay? Should private interests be allowed to profit from the use of public lands by hunters?

Rationing outdoor recreational opportunities according to the ability-to-pay principle is relatively common today, and appears to be growing in popularity. Fees charged for hunting and fishing licenses have advanced substantially in recent years. State Fish and Game Departments have shown an interest in determining the price elasticity of demand for these activities in order to

^{33/} This is dictated largely by physical considerations. As the space in which to accommodate users (hunters, campers, hikers, etc.) becomes more crowded, the costs of accommodating additional users (with reasonable standards of safety and order) will go up rapidly; conversely, the satisfaction received by these users is likely to go down.

establish a pricing policy that will come closer to maximizing revenues. This type of rationing obviously discriminates against the low-income segment of our population. While there is no immediate danger of hunting becoming a "sport of the rich," those at the bottom of the income scale are likely to be priced out of the market. ^{34/} Trespass fees are another step in this direction. Whether this is good or bad is a matter for public opinion to decide. But BLM has been forced into the position of accepting, on a temporary basis at least, what amounts to user fees, collected by private landowners, for recreational uses of blockaded public lands.

Even if one accepts ability to pay as a legitimate criterion for rationing access, there is still the question of fees levied by third parties. Is it proper for private landowners to sell indirectly that which belongs to all the people, i.e., the right to use public domain lands for recreational purposes? As a matter of principle, most people would give a negative answer to this question. But they would also agree that the legal rights of landowners to protect their properties, including the right to control trespass, deserve public support. These conflicting principles somehow must be reconciled. Application of the economic rule of associating costs and benefits is one way of bringing about such a reconciliation.

Association of Costs and Benefits

There is a basis in economic theory for asserting that individuals and groups incurring costs should be entitled to the benefits resulting from such costs. By the same token, those who receive benefits should be liable for the costs of producing such benefits. This is essential for the efficient allocation and use of resources. Much of our law and custom is built on this concept. But our institutions sometimes fail to associate costs and benefits, especially those that result from external (offsite) forces. To be more specific, some of our laws, rules, and ways of behaving seem to be based on the assumption that all costs and benefits are confined within property boundaries--as if what one owner does with his property is of no concern to anyone else. We know, however, that costs and benefits resulting from recreational uses of land can and do cross property boundaries. This leads to particularly vexing problems in areas of intermingled public and private lands.

In the two case-study areas, private landowners became aware of the "externalities" (or "spillover effects") associated with recreational uses, sought ways of avoiding offsite costs and retaining offsite benefits, and seized upon the most obvious legal alternative open to them--blockading public lands. Owners in the Piceance Creek area went one step farther by establishing a system of trespass fees to convert offsite benefits into cash. This type of solution obviously is unacceptable from a welfare economic standpoint. Instead of associating costs and benefits among public and private interest groups, the public (BLM) is forced to bear all of the costs while private landowners receive all of the benefits. The rights of private property not only are protected under this arrangement, but are extended to public lands as well.

^{34/} This already has happened in the case of most low-income people, especially those living in urban areas. Big-game hunting is one of our most expensive forms of outdoor recreation.

Confronted with this situation, the Bureau's response is limited by institutional restraints. It can break the blockade thrown up by private landowners by acquiring public rights-of-way through purchase, condemnation, or modification of its landlord-tenant arrangements with ranchers. This would be a step in the direction of associating costs and benefits. But it would not go far enough. While it is inequitable that private parties collect benefits properly belonging to the public, it is also inequitable that private parties share the costs of producing public benefits. There is no way at present for the Bureau to fully compensate landowners for offsite costs associated with use of public lands for recreational purposes. The best it can do is to try to prevent some of these costs from arising by regulating the activities of recreationists, posting boundaries, etc. It may be cheaper and more effective, in the longrun, to work out some way to compensate landowners for damages, when and if they occur. This will require institutional changes, since the Bureau's activities presently are confined primarily (by both law and custom) to regulatory functions. 35/

In summary, economic considerations suggest that something can and should be done about access situations similar to those found in the Piceance and Caliente areas. These situations are undesirable from the standpoint of efficient use of public resources and from the standpoint of equitable distribution of goods and services produced by these resources. The conflicts appear to originate and persist as the result of institutional imperfections which prevent the association of costs and benefits arising from the use of public lands for recreational purposes. The challenge to the Bureau, then, is in recognizing the need for, developing, and implementing changes in policies and operating procedures governing the distribution of these costs and benefits among individuals, groups, and the public at large.

Legal Considerations

Some of the legal problems raised by conflicts over public access have been mentioned in other parts of the report. Existing laws and regulations are not capable of dealing effectively with the problem of offsite costs and benefits arising from the use of public lands for recreational purposes. The same might be said about disputes involving the use of private lands. The problem here is less acute, however, since disputes among private interests can be resolved, in part at least, through the operation of market mechanisms. This recourse is not readily available in public-private disputes. In this case, legal institutions not only establish the "rules of the game," they also specify who will win and who will lose; i.e., bargaining transactions are replaced by rationing transactions. To the extent that the outcomes of rationing transactions differ from those that would have resulted from bargaining

35/ In attempting to resolve access disputes (or other land-use conflicts, for that matter), BLM presently is forced to rely almost exclusively on its regulatory powers. It can use a "stick" but not a "carrot" to bring about a compromise among rival users. And this is the crux of the problem. It is difficult to "force a benefit." Regulations can force someone to refrain from some action (i.e., placing locked gates on public land), but they cannot ordinarily force someone to take a positive action (i.e., welcome hunters). Some type of monetary incentive could overcome this problem.

transactions, considerable antagonism is likely to develop among parties to a dispute.

This has happened in the Caliente area. The refusal of landowners to sell public rights-of-way across their lands reflects their often-expressed (and seemingly valid) judgment that they have much more to lose than to gain from such transactions. Yet the Bureau apparently has gone along with the demands of these landowners to the fullest extent possible under existing laws and regulations. Are these demands unreasonable, or are the laws unfair?

If landowners expect to be fully compensated for loss of exclusive possession and use of public lands, a privilege they now enjoy solely by virtue of strategic location, their position must be regarded as unreasonable from both a legal and an economic point of view. If, however, they merely expect to be compensated for damages (immediate and future) to their own lands which result from the recreational uses of public lands, their position is defensible from an economic--and possibly from a legal--point of view. The position of the Bureau falls somewhat short of reaching the more moderate demands of landowners. Existing laws and regulations do not permit the Bureau to add all offsite (private) costs to the price offered for public rights-of-way, nor to commit the Government to pay for damages that may occur in the future.

Eminent domain provides the ultimate legal remedy, the last resort, for resolving public-private disputes involving property rights. When voluntary negotiations become hopelessly deadlocked, the courts can be called upon to settle the disputes. This remedy should be, and has been, used rather sparingly by BLM. This accounts for a good deal of the doubt and uncertainty which now surrounds legal aspects of the issue. While there is little doubt that the Bureau could successfully condemn a public right-of-way into the Piceance and Caliente areas, no one really knows what the courts would decide was a fair price and how this price would be computed. The only way to clarify this matter is to initiate condemnation procedures and see what happens.

In summary, legal considerations do place some important restraints on the Bureau's actions, but these restraints should not be regarded as fixed or insurmountable. Some rules and regulations that the BLM operates under can, and probably should, be changed.

Policy Considerations

Ultimately, policy considerations necessarily and properly play a dominant role in the Bureau's decisionmaking process. Public access is an important policy issue. It seems clear that something must be done about the type of access problems described in this report if the BLM is to follow legislative and administrative guidelines already laid down. But it is clear also that the Bureau must seek and obtain the support of interest groups and other public agencies concerned with outdoor recreation. State fish and game management agencies, local and county officials, sportsmen's associations, business groups, landowners' associations, and other interested organizations need to be apprised of the nature and extent of the Bureau's access problems and reminded of the shared responsibilities in this field.

Effective public relations could do much to ward off the threat of adverse political reaction. Most of the people in this country know little or nothing about BLM, the land it manages, or the problems it faces. Good lines of communication exist between the Bureau and its commercial user groups, but too little has been done to extend these lines of communication to all interest groups. The political process cannot operate effectively under these conditions.

Need for Positive Planning and Action

The Bureau has been slow to act positively on the public access problem. This may be a carryover from the past, when BLM was committed to serving the interests of established user groups and was more of a custodian than a manager. In any event, this hesitance discourages efforts to initiate a reconciliation among divergent interests and places the Bureau under criticism.

This point is illustrated by the two case studies. In the Piceance Creek area, the Bureau's position regarding public access is rather ambiguous. BLM acknowledges that the public is denied the use of prime hunting lands, a use that is provided for in the Taylor Grazing Act, as well as more recent legislation, but has done relatively little to remedy the situation. It can defend this position on grounds that private landowners have a legal right to control use of private roads and to profit therefrom. This line of reasoning is valid--as far as it goes. Any change in the status quo will affect the legal rights and economic interests of landowners. But what about sportsmen and associated interest groups? Will they be satisfied with this explanation, knowing that the Bureau, as representative of the public, has both the obligation and the authority to change the access status of public lands whenever this is deemed to be in the public interest? 36/

The Bureau has taken a somewhat different position in the Caliente area. A number of "outside" pressures (e.g., the terms of the Caliente withdrawal, the aggressiveness of recreational interest groups, and the prodding of State agencies) caused the Bureau to adopt a more positive approach to the access problem. The first step was to prepare a management plan for the area in cooperation with the California Department of Fish and Game. This plan specifically called for the acquisition of public access as a necessary part of a comprehensive program for utilizing and developing the recreational resources of the area. The next step was to enlist the cooperation of local and State interest groups and agencies. Lines of communication were established and maintained with sportsmen's organizations, county officials, etc. The final step--acquisition of public rights-of-way--has not yet been taken. Although the net result is the same as that of the Piceance Creek area--no change in the access status of public lands--the Bureau would seem to be on a somewhat safer political footing in this case. It can be attacked for moving too slowly, but not for failing to move at all.

36/ It should be noted, however, that hunters who pay for access privileges to public lands seldom complain. Trespass fees could not be collected without the cooperation of these hunters. Although it is not often publicized, there is a good deal of dissension among sportsmen on the issue of fee-hunting or fee-fishing (whether on public or private lands).

That the Bureau has not resolved its access problems appears to result from failure to deal effectively with policy problems. While the economic and legal restraints noted earlier prevent the development of any large-scale access program at this time, they are not binding in individual cases.

Major Policy Issues

What are the major policy issues, and how can they be resolved? First, there is the age-old controversy about public rights in private lands and private rights in public lands. The well-publicized conflict of interest between landowners and sportsmen is one aspect of this controversy. Anything the Bureau does or does not do with respect to public access will be opposed by some interests and supported by others. This dilemma may be more apparent than real, however. The Bureau can help to bring about a consensus on this matter by collecting and disseminating information, establishing forums for the exchange of ideas and opinions, and generally taking a more active role in the discussion. This will not eliminate uncertainty, but it may keep it within tolerable limits.

Second, there is the issue of intergovernmental responsibilities in the field of outdoor recreation. Closely related to this is the question of conflicting geographical interests. Many local, State, and Federal agencies are developing programs in recreation. Each agency feels a need to improve its program in the rapidly growing recreation field. The Bureau has problems of its own. Its responsibilities are broad, and the clientele is widely dispersed and split on many issues. This is especially true in the case of public access. The construction and maintenance of public roads primarily is the responsibility of State and local governments. Wildlife resources are protected and managed by State agencies (with some exceptions). Where do local and State responsibilities end and the Bureau's responsibilities begin? This is not an easy question to answer, but the Bureau must have an answer to hold its own in this intergovernmental competition.

A third policy issue centers on the question of user fees. Should recreational users be given a "free ride" at the expense of other user groups and taxpayers at large? A system of user fees for hunting, from which the Bureau would receive compensation, would alleviate uncertainty attached to annual budget requests and appropriations associated with this activity. It would also free the Bureau from the task of selecting some alternative system for rationing hunting opportunities on public lands, if and when this should become necessary. The fact that many hunters already have demonstrated their willingness and ability to pay substantial fees for the privilege of using public lands suggests that hunting has a higher value than most people realize.

These last two issues (intergovernmental responsibilities and user fees) could raise an even larger policy issue. The heavy concentration of Federal lands in the West and State jurisdiction over the utilization of fish and wildlife resources pose real problems in providing equal access to hunting and fishing opportunities on Federal lands. It would be difficult to change the geographical distribution of Federal lands as a means of giving all citizens equal access to these opportunities. There are those who argue, however, that sportsmen living far from Federal lands should not be penalized additionally

by discriminatory pricing policies (license fee schedules) of State governments. They point out that Federal lands belong to all the people and should be available to everyone on an equal basis. A successful effort to curb the powers of State agencies to set higher fees for out-of-State hunters using Federal lands would have a deleterious effect on the economies of Western States, where the bulk of big-game hunting is done on Federal lands. Considerable support for the idea may come from other parts of the country, where people seem to be taking a greater interest in the use and management of public lands.

APPENDIX

Table A-1.--Estimated expenditures of an average out-of-State deer hunter for a 3-day hunt, by type and place of expenditure, Piceance Planning Unit, 1962-66

Type of expenditure	Place of expenditure			Total
	In Colorado		Outside Colorado	
	Local <u>1</u> /	Other		
Fixed expenditures:				
License fees -----:	-----	\$40.00	-----	\$40.00
Arms and ammunition ---:	\$ 3.00	-----	\$15.00	18.00
Clothing -----:	2.00	-----	4.00	6.00
Special equipment <u>2</u> / --:	2.00	-----	14.00	16.00
Trip expenditures:				
Transportation <u>3</u> / -----:	-----	15.00	35.00	50.00
Food <u>4</u> / -----:	-----	5.00	15.00	20.00
Commercial lodging <u>5</u> / -:	-----	3.00	9.00	12.00
Incidentals <u>6</u> / -----:	-----	2.00	3.00	5.00
Hunting expenditures:				
Transportation <u>7</u> / -----:	4.00	-----	-----	4.00
Food <u>4</u> / -----:	15.00	-----	-----	15.00
Commercial lodging <u>5</u> / -:	6.00	-----	-----	6.00
Incidentals <u>6</u> / -----:	12.00	-----	-----	12.00
Guide services <u>8</u> / -----:	4.00	-----	-----	4.00
Land-use fees <u>9</u> / -----:	5.00	-----	-----	5.00
Trespass fees <u>10</u> / -----:	7.00	-----	-----	7.00
Game storage -----:	5.00	-----	-----	5.00
Total expenditures --:	65.00	65.00	95.00	225.00

Footnotes are on p. 59.

Table A-2.--Estimated expenditures of an average Colorado deer hunter (residing outside local area) for a 3-day hunt, by type and place of expenditure, Piceance Planning Unit, 1962-66

Type of expenditure	Place of expenditure			Total
	In Colorado		Outside Colorado	
	Local <u>1/</u>	Other		
Fixed expenditures:				
License fees -----	-----	\$ 7.50	-----	\$ 7.50
Arms and ammunition ----	\$ 3.00	15.00	-----	18.00
Clothing -----	2.00	4.00	-----	6.00
Special equipment <u>2/</u> ---	2.00	14.00	-----	16.00
Trip expenditures:				
Transportation <u>3/</u> -----	-----	12.00	-----	12.00
Food <u>4/</u> -----	-----	5.00	-----	5.00
Commercial lodging <u>5/</u> --	-----	-----	-----	-----
Incidentals <u>6/</u> -----	-----	2.50	-----	2.50
Hunting expenditures:				
Transportation <u>7/</u> -----	4.00	-----	-----	4.00
Food <u>4/</u> -----	15.00	-----	-----	15.00
Commercial lodging <u>5/</u> --	6.00	-----	-----	6.00
Incidentals <u>6/</u> -----	12.00	-----	-----	12.00
Guide services <u>8/</u> -----	4.00	-----	-----	4.00
Land-use fees <u>9/</u> -----	5.00	-----	-----	5.00
Trespass fees <u>10/</u> -----	7.00	-----	-----	7.00
Game storage -----	5.00	-----	-----	5.00
Total expenditures ---	65.00	60.00	-----	125.00

Footnotes are on p. 59.

Table A-3.--Estimated expenditures of an average local deer hunter for a 3-day hunt, by type and place of expenditure, Piceance Planning Unit, 1962-66

Type of expenditure	Place of expenditure			Total
	In Colorado		Outside Colorado	
	Local <u>1/</u>	Other		
Fixed expenditures:				
License fees -----	-----	\$ 7.50	-----	\$ 7.50
Arms and ammuntion -----	\$15.00	3.00	-----	18.00
Clothing -----	6.00	-----	-----	6.00
Special equipment <u>2/</u> ---	10.00	2.50	-----	12.50
Trip expenditures:				
Transportation <u>3/</u> -----	-----	-----	-----	-----
Food <u>4/</u> -----	-----	-----	-----	-----
Commercial lodging <u>5/</u> ---	-----	-----	-----	-----
Incidentals <u>6/</u> -----	-----	-----	-----	-----
Hunting expenditures:				
Transportation <u>7/</u> -----	4.00	-----	-----	4.00
Food <u>4/</u> -----	3.00	-----	-----	3.00
Commercial lodging <u>5/</u> ---	-----	-----	-----	-----
Incidentals <u>6/</u> -----	2.00	-----	-----	2.00
Guide services <u>8/</u> -----	-----	-----	-----	-----
Land-use fees <u>9/</u> -----	-----	-----	-----	-----
Trespass fees <u>10/</u> -----	-----	-----	-----	-----
Game storage -----	-----	-----	-----	-----
Total expenditures	40.00	13.00	-----	53.00

Footnotes are on p. 59.

Footnotes to Tables A-1, A-2, and A-3

- 1/ Includes Garfield, Mesa, Moffat, and Rio Blanco Counties.
- 2/ Per trip costs attributable to deer hunting of utility vehicles, camping equipment, trailers, etc.
- 3/ Based on average 2,000 miles of travel for out-of-State hunters and 480 miles for nonlocal Colorado hunters; costs computed at 10¢ per mile shared by party of 4 hunters.
- 4/ Food costs, including restaurant meals, computed at \$5 per day for non-resident hunters and \$1 per day for local hunters.
- 5/ Each nonresident hunter was allocated 2 nights of commercial lodging at \$6 per night.
- 6/ Entertainment, gifts, liquor, etc.
- 7/ Based on travel of 160 miles at 10¢ per mile, shared by party of 4.
- 8/ Includes horse rentals, camping fees, etc.
- 9/ Fees charged for hunting privileges on 61,040 acres of private lands (478 hunters at \$25 per hunter) divided by total number of nonlocal hunters (2,450) using area in average year.
- 10/ Fees charged for access privileges to 89,600 acres of blockaded BLM lands (702 hunters at \$25 per hunter) divided by total number of nonlocal hunters (2,450) using area in average year.

Table A-4.--Estimated average per trip expenditures of out-of-State deer hunters, by type and place of expenditure, Piceance Planning Unit, 1962-66

Type of expenditure	Place of expenditure			Total
	In Colorado		Outside Colorado	
	Local	Other		
Fixed expenditures:				
License fees -----	\$ -----	\$59,960	-----	\$59,960
Arms and ammunition --	\$ 4,497	-----	\$22,485	26,982
Clothing -----	2,998	-----	5,996	8,994
Special equipment ---	2,998	-----	20,986	23,984
Trip expenditures:				
Transportation -----	-----	22,485	52,465	74,950
Food -----	-----	7,495	22,485	29,980
Commercial lodging --	-----	4,497	13,491	17,988
Incidentals -----	-----	2,998	4,497	7,495
Hunting expenditures:				
Transportation -----	5,996	-----	-----	5,996
Food -----	22,485	-----	-----	22,485
Commercial lodging --	8,994	-----	-----	8,994
Incidentals -----	17,988	-----	-----	17,988
Guide services -----	5,503	-----	-----	5,503
Land-use fees -----	7,311	-----	-----	7,311
Trespass fees -----	10,738	-----	-----	10,738
Game storage -----	8,166	-----	-----	8,166
Total expenditures :	97,674	97,435	142,405	337,514

Source: Computed by multiplying average expenditures per hunter (table A-1) by average number of hunters (1,499).

Table A-5.--Estimated average per trip expenditures of Colorado deer hunters (residing outside local area) by type and place of expenditure, Piceance Planning Unit, 1962-66

Type of expenditure	Place of expenditure		Total
	Local	Other	
Fixed expenditures:			
License fees -----	-----	\$ 7,133	\$ 7,133
Arms and ammunition ---	\$ 2,853	14,265	17,118
Clothing -----	1,902	3,804	5,706
Special equipment ----	1,902	13,314	15,216
Trip expenditures:			
Transportation -----	-----	11,412	11,412
Food -----	-----	4,755	4,755
Commercial lodging ----	-----	-----	-----
Incidentals -----	-----	2,377	2,377
Hunting expenditures:			
Transportation -----	3,804	-----	3,804
Food -----	14,265	-----	14,265
Commercial lodging ----	5,706	-----	5,706
Incidentals -----	11,412	-----	11,412
Guide services -----	3,491	-----	3,491
Land-use fees -----	4,639	-----	4,639
Trespass fees -----	6,812	-----	6,812
Game storage -----	5,180	-----	5,180
Total expenditures --	61,966	57,060	119,026

Source: Computed by multiplying average expenditures per hunter (table A-2) by average number of hunters (951).

Table A-6.--Estimated average per trip expenditures of local deer hunters,
by type and place of expenditure, Piceance Planning Unit, 1962-66

Type of expenditure	Place of expenditure		Total
	Local	Other	
Fixed expenditures:			
License fees -----:	-----	\$ 2,040	\$ 2,040
Arms and ammunition ---:	\$ 4,080	816	4,896
Clothing -----:	1,632	-----	1,632
Special equipment -----:	2,720	680	3,400
Trip expenditures:			
Transportation -----:	-----	-----	-----
Food -----:	-----	-----	-----
Commercial lodging ----:	-----	-----	-----
Incidentals -----:	-----	-----	-----
Hunting expenditures:			
Transportation -----:	1,088	-----	1,088
Food -----:	816	-----	816
Commercial lodging ----:	-----	-----	-----
Incidentals -----:	544	-----	544
Guide services -----:	-----	-----	-----
Land-use fees -----:	-----	-----	-----
Trespass fees -----:	-----	-----	-----
Game storage -----:	-----	-----	-----
Total expenditures --:	10,880	3,536	14,416

Source: Computed by multiplying average expenditures per hunter (table A-3) by average number of hunters (272).

Table A-7.--Estimated per trip amount of local income generated by expenditures of deer hunters residing outside local area by source, Piceance Planning Unit, 1962-66

Type of expenditure	Expenditures		Local income generated		
	Total <u>1/</u>	Remaining in area <u>2/</u>	Initially <u>3/</u>	Finally <u>4/</u>	Per \$ spent <u>5/</u>
	<u>Dollars</u>	<u>Proportion</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
Supplies and equipment :					
Arms and ammunition - :	7,350	0.25	1,838	2,418	0.33
Clothing ----- :	4,900	0.20	980	1,289	0.26
Special equipment --- :	4,900	0.12	588	774	0.16
Hunting activities: :					
Transportation ----- :	9,800	0.25	2,450	3,223	0.33
Food ----- :	36,750	0.40	14,700	19,341	0.53
Commercial lodging -- :	14,700	0.75	11,025	14,506	0.99
Incidentals ----- :	29,400	0.35	10,290	13,539	0.46
Guide services ----- :	8,994	1.00	8,994	11,833	1.32
Land-use fees ----- :	11,950	1.00	11,950	15,723	1.32
Trespass fees ----- :	17,550	1.00	17,550	23,091	1.32
Game storage ----- :	13,346	0.70	9,342	12,291	0.92
Total or average () -- :	159,640	(0.56)	89,707	118,028	(0.74)
Per hunter ----- :	65	----	37	48	----
Per day ----- :	22	----	12	16	----
Without trespass fees - :	142,090	(0.51)	72,157	94,937	(0.67)
Per hunter ----- :	58	----	29	39	----
Per day ----- :	19	----	10	13	----

Footnotes are on p. 64.

Footnotes for Table A-7

1/ Expenditures in local area by out-of-State hunters and nonlocal Colorado hunters (Tables A-4 and A-5).

2/ This shows the proportion of each type of expenditure that remains in the local area in the form of wages, profits, etc. For each dollar spent on clothing, for example, 20¢ remains in the local area and 80¢ goes to suppliers outside the area.

3/ This shows the amount of direct income generated by each type of expenditure (column 1 times column 2).

4/ This is the final or ultimate amount of local income generated by each type of expenditure as it moves through the local economy until it finally "leaks" away entirely to outside sources. It was computed from the formula:

$$\frac{1}{a \cdot 1 - bc}$$

where a = proportion remaining in area
b = propensity to consume locally, and
c = proportion of local expenditures
accruing as local income.

The figures for b and c were assumed to be 0.6 and 0.4 respectively (See Lund, Richard E., A Study of the Resources, People, and Economy of Southwestern Wyoming, Wyom. Nat'l Resource Bul. 1962)

5/ This shows the amount of final local income generated by each dollar spent by non-resident deer hunters.

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